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Ely Field Office

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Barrick Bald Mountain Mine Vantage Exploration Project

Environmental Assessment

NV-043-08-002

Case File # N68259

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1.0 Introduction

1.1 Background Information

Barrick Gold U.S. Inc, Bald Mountain Mine (BMM) is proposing an exploration program within the reclaimed Alligator Ridge Plan of Operations. The name of the exploration project is Vantage Exploration, named after one of the open pits at the mine. The mine is located in White Pine County, approximately 75 miles by road or 45 miles by air, northwest of Ely, Nevada on land administered by the U.S. Department of the Interior, Bureau of Land Management (BLM), Ely Field Office. The proposed exploration would occur within Mount Diablo Base and Meridian, Township 22 North, Range 57 East, and within portions of Sections 26, 35, and 36. See Figure 1. The Project Proponent is: Barrick Gold U.S., Bald Mountain Mine. P.O. Box 2706, Elko, Nevada, 89801.

This environmental assessment (EA) was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and in compliance with applicable regulations and laws passed subsequently, including the President's Council on Environmental Quality regulations, U.S. Department of Interior requirements, and guidelines listed in the BLM Manual Handbook H-1790-1. Previous NEPA analyses for the Alligator Ridge Mine and facilities are included in the following documents:

EA-NV-040-92-012 Environmental Assessment for USMX. for their Plan of Operations and Reclamation Plan for Alligator Ridge Mine. Approved March 10, 1993.

NV-040-88-22 Environmental Assessment for Amselco Proposed Haul Road Bald Mountain Top Area to Alligator Ridge. Approved August 26, 1988.

EA-NV-7-7 Environmental Assessment for the Alligator Ridge Mine Tailings Impoundment. Approved February 23, 1987.

This environmental assessment is also tiered to two closely related NEPA Documents:

1. The Bald Mountain Mine Expansion Project Environmental Impact Statement approved September 1995 which is incorporated by reference. The Alligator Ridge Mine was included in the analysis area for cumulative impacts.
2. The Bald Mountain Mine Programmatic Exploration EA, approved in October 2004 is also incorporated by reference. This EA analyzed drilling in the entire region surrounding Alligator Ridge, but excluded all active Plan of Operation boundaries for administrative accounting. However, resource analysis and impacts would be the same or similar for exploration activities within the Alligator Ridge Mine Plan.

1.2 Past Activities

The Alligator Ridge Mine has been in operation since 1981. Mineralization in the area was first identified in 1976 by a lone prospector. Extensive exploration was conducted by Amselco and associated companies throughout the seventies. Metallurgical testing and a pilot cyanide heap leach program were initiated in 1979. Economic feasibility studies were completed in 1980, and the first gold bar was poured during November of 1980. In 1981 the crusher was completed, and the 42 mile county road off highway 50 was paved to the Alligator Ridge Mine Site (ARM). Full scale mining operations began in March of 1981 under the ownership of Amselco-Occidental Minerals Joint Ventures. A description of the ARM operation was written by Amselco for the mine site in 1985. This is on file at the Ely District BLM under file #N46-81-018N. An EA was written for the mine tailings impoundment in February of 1987. Another EA was written in August of 1988 for the 17.3 mile haul road from Bald Mountain Top Area to the processing facility at ARM. This road was needed to transport and process approximately 300,000 tons of ore that was stockpiled by Placer Dome. The EA for the mine operations and reclamation plan was completed in 1993.

Since 1980 over 2.5 million tons of ore have been recovered at ARM. The mine was designed to produce 60,000 ounces of gold per year. In 1990, the property was acquired by USMX, who continued secondary leaching and gold recovery from the heap leach facility until 1993. In August 1993, Placer Dome U.S. Inc. purchased the property and continued those secondary leaching and gold recovery operations until 1997. Reclamation activities began in 1998 and were mostly completed by 2002. A small bond is still held pending successful reclamation. In 2006, Barrick Gold US Inc., Bald Mountain Mine (BMM) became the operator for Alligator Ridge Mine. The acronym of BMM is used throughout this document to refer to the operator.

1.3 Need For The Proposal

The purpose for the proposed exploration is to determine if economically viable precious metals-bearing deposits remain within the Alligator Ridge Mine Plan of Operations. The need for the EA is to approve an exploration amendment to the existing Alligator Ridge Mine Plan of Operations. The proposed drilling operations are needed to evaluate the potential for future mine development. The need for the proposed project arises from the international, national, and regional market demands for gold.

1.4 Relationship To Planning

Although the Egan Resource Management Plan (RMP) is silent on minerals actions, the Proposed Action is in conformance with the approved decisions of the RMP. The Proposed Action is also consistent with the White Pine County Public Land Use Plan (1998), which states, "Recognize that the development of Nevada's mineral resources is desirable and necessary to the nation, the state, and White Pine County. Retain existing mining areas and promote the expansion of mining operations and areas."

1.5 Issues

No major issues were identified during the Ely Field Office scoping on January 28, 2008. Notice of the proposed action was and placed on the Ely BLM website to fulfill the 30 day public notification process as described in the regulations (43 CFR 3809.411c). Public scoping letters were sent on February 8, 2008. No comments were received.

1.6 Previous NEPA analysis

Previous EAs analyzing mining and exploration at the Alligator Ridge Mine did not address noxious and non-native, invasive weeds and new special status species such as sage grouse and pygmy rabbit habitat. These previous analyses are also more than 10 years old. Some previously disturbed areas within the plan of operations have been well reclaimed and exhibit characteristics of undisturbed ground for purposes of analysis. Other areas have either not re-established vegetation or include unreclaimed features such as open pits and partly backfilled pits. These unreclaimed areas are also taken into account in this analysis. Figure 2 shows areas of proposed disturbance verses previously disturbed areas. This satellite photo shows disturbance prior to reclamation.

2.0 Description of the Proposed Action and Alternatives

2.1 Proposed Action

The proposed action is for 18 drill sites within the plan boundary using a track rig. It is expected that the drilling would be completed in April to June of 2008. There would be 1.7 miles of new and reopened road to access these sites. Drill site disturbance would total 0.8 acres, and drill road disturbance would total 3.2 acres for a total proposed disturbance of about 4 acres. See Figure 3. Water would be obtained from existing water wells on site.

General drilling operations and reclamation would follow the same procedures as outlined in the Bald Mountain Exploration Plan and analyzed in the 2004 Programmatic EA. These general procedures that are applicable to exploration within the Alligator Ridge Mine Plan are reproduced below.

2.1.1 Drilling

Drilling would be conducted using a track mounted drill rig. A water truck, pipe truck, and one-ton pickup would accompany each drill rig. It is expected that one to five drill rigs would be operating within the Project Area. Both vertical and angle holes would be drilled. Drilling would be conducted using both wet and dry drilling techniques as the formation requires, in order to maintain an open hole. Water would be obtained from existing wells owned by BMM within the Project Area. Drill sites would disturb about 0.028 acres each. Drilling fluids would be discharged into sumps.

Drill pads would be constructed by removing the vegetation and leveling the ground surface. Soil stripped in the process would be stockpiled as a berm for sediment control and would be available for redistribution during reclamation. Sumps would be excavated and the resulting material and growth

media would be stockpiled on site for use in backfilling and reclamation. Stockpiles remaining over the growing season would be seeded with the interim seed mix.

2.1.2 Road Construction

Roads and drill pads would be constructed in a manner to minimize surface disturbance and potential soil erosion. Access roads would be constructed on contour to the extent practical. Typically, road grades would range from zero to 16 percent; however, some routes may exceed 16 percent. On steeper slopes, a dozer would be required to first construct access roads in order to safely traverse the terrain. Although the blade on the dozers is typically ten to 12 feet wide, a total disturbance corridor of 15 feet would be utilized to account for cut and fill slope, and includes the construction of drill sites and sumps. On slopes less than 30 percent, dozers are optional, and if used, a disturbance corridor ranging from ten to 17 feet is utilized for cut and fill, and construction of drill pads and sumps. Roads are projected to average about 0.3 acres of disturbance for each 1,000 feet. Berms would be built to comply with all applicable Mine Safety and Health Administration regulations. These roads would be for drill access only and not for through traffic. The only maintenance would be snow removal during inclement weather. No culverts would be installed. BMM constructs roads and drill sites with appropriate slope on the cut-banks, as necessary, to minimize erosion and visual impacts. Drainage structures would be constructed, where necessary, to minimize excessive erosion. Drainage structures may consist of, but not be limited to waterbars, borrow ditches, and contour furrows, to reduce offsite sediment transport. Growth media would be placed in sidecast fill material on constructed roads and drill sites.

2.1.3 Reclamation

The post-exploration land use for the Project Area would remain consistent with the pre-exploration land use. The uses include mineral exploration, livestock grazing, wildlife, wild horse habitat, and recreation. Reclamation would be in conformance with the BLM and Nevada State reclamation regulations. In areas where roads would be constructed, growth media and berms would be stockpiled and seeded with the interim seed mix shown in Table 1. Roads would be ripped and scarified as needed prior to reseeding. Road cuts and fills would be replaced to their approximate original contour using a trackhoe or dozer. Material would be pushed back into place where natural terrain would permit equipment to operate safely, and berms, ditches, turnouts and other features would be removed. Waterbars and other diversion methods may be retained to enhance stability. Riprap or other methods would be used if drainage stabilization is required.

Table 1: Interim Seed Mix

Name	Common Name	Rate (PLS/acre)
<i>Elymus lanceolatus</i>	Thickspike wheatgrass	5.0
<i>Elymus trachycaulus</i>	Slender wheatgrass	4.0
<i>Pascopyrum smithii</i>	Western wheatgrass	5.0
<i>Onobrychis viciifolia</i>	Remont sanfoin	3.0
Total		17.0

Final reseeding would occur during the period of October through March using the reclamation seed mix in Table 2 or some approved variation. The seed mix could vary depending on the area and the availability of a particular species. All other reclamation activities can be performed at any time of the year and in any general sequence. The seed mixture would be applied at the appropriate rate to meet the final reclamation standards. No fencing of the seeded, reclaimed areas would occur.

Table 2: Reclamation Seed Mix

Name	Common Name	Rate (PLS/acre)
<i>Atriplex canescens</i>	Fourwing Saltbrush	0.6
<i>Elymus cinereus</i>	Great Basin Wildrye	4.0
<i>Poa sandbergii</i>	Sandberg Bluegrass	0.3
<i>Sitanion hystrix</i>	Squirreltail	1.4
<i>Agropyron spicatum</i>	Bluebunch Wheatgrass	2.5
<i>Oryzopsis hymenoides</i>	Indian Ricegrass	2.5
<i>Penstemon palmeri</i>	Palmer Penstemon	0.1
<i>Eriogonum umbellatum</i>	Sulfur Buckwheat	0.1
<i>Lupinus caudatus</i>	Lupine	0.5
	Total	12.0

The above is a list of BLM-approved reclamation species; the actual seed mix will vary from one area to another. The BLM, Nevada Department of Wildlife and BMM will decide upon the actual seed mix before seeding of a particular area.

BMM expects limited disturbance of piñon/juniper trees. The piñon/juniper would be either spread back over the reclaimed areas to augment the reclamation efforts or would be left in piles for wildlife cover.

BMM would monitor revegetation success and the presence of noxious and non-native, invasive weeds on an annual basis until project release. Weed control would be performed during the appropriate season to eradicate infestations. Drill holes would be plugged immediately after data collection is complete, in accordance with Nevada Revised Statute 534.425-428. If a drill hole does not penetrate the aquifer, it would be backfilled from the total depth with the drill cuttings or inorganic fill material, and the top ten feet would be sealed. If a drill hole penetrates the aquifer, it would be plugged with an approved mixture and the top ten feet would be sealed with a cement grout, concrete grout, or “neat cement” plug. Reclamation procedures would be undertaken concurrently with operations for disturbed areas where no further activities are planned.

2.1.4 Revegetation Standards

Standards for successful reclamation and bond release for the exploration project area will follow the Nevada Guidelines and will be site specific as follows:

Quantitative standards for vegetation release were developed in accordance with the Nevada State Interim Standards. The target cover value of 25 percent perennial canopy coverage meets or exceeds 100 percent of the like adjacent cover as averaged from Range Site Descriptions of the project area. The following goals would be used to determine the success of revegetation efforts:

Establishment of perennial vegetation with 25 percent perennial canopy coverage of the surface.

Diversity of cover would be as follows, based on total vegetation occurrence:

- At least 40 percent represented by perennial grasses, consisting of at least four species;
- At least 05 percent represented by forbs, consisting of at least two species;
- At least 10 percent represented by shrubs, consisting of at least two species;
- The remaining 45 percent may be any combination of perennial vegetation.
- No noxious weeds would be allowed on any of the reclaimed areas.

The above percentages include both perennial seeded species and perennial species that establish voluntarily on site. Cover and diversity would be determined by either the Line Intercept method or the Step Point Transect method of cover monitoring (BLM 1985). The goal for cover is based on the range site descriptions for the disturbed areas. These range site descriptions are detailed in the EIS. The diversity goals are based on the post-mining land use objectives for the area.

2.1.5 Best Management Practices

Operating procedures that would be used by BMM incorporate the Ely Field Office’s Best Management Practices (BMPs) and are presented in their entirety in Appendix A. Table 3 presents the proposed best management practices (BMP) by resource.

Table 3: Best Management Practices by Resource for Individual Drill Plans

Critical Element/ Resource	Potential Issues To Consider	Actions	Applicable BMP
Air:	Fugitive dust from roads and drilling	Use water trucks as necessary to control dust Use dust collection cyclones during dry drilling activities Seed with interim seed mix if growth media berms will remain over the growing season	40, 41
Cultural resources	Disturbance of cultural resources	Inventory has been conducted for Alligator Ridge Mine Historic properties and all cultural resources would be avoided. Submit all cultural reports to the BLM.	6-13
Native American religious concerns	Consult with potentially affected Native American tribes	Conduct consultation with local tribes during monthly coordination meeting	
Non-native invasive species	Increasing weed infestation from existing local sources Introduction of new weed infestations by importing new seed sources from equipment	Determine status of noxious weed infestations along access routes and in proximity to drilling operations Noxious weed survey in areas of proposed disturbance Drill rig washing before entering site Avoid driving through established weed areas Educate equipment operators to recognize and avoid weed areas	14-23, 45
Special Status Species	Impacts to sage grouse, pygmy rabbits, and others	Determine location of any leks in the area Identify potential pygmy rabbit habitat	38

Critical Element/ Resource	Potential Issues To Consider	Actions	Applicable BMP
		Identify key habitat of other special status species	
Wastes, hazardous and solid	Accidental spills of hydrocarbons that could contaminate water, soil, and vegetation	Follow BMM and contractor SOPs for handling hazardous and solid wastes	28-31
Water quality	Potential impacts to groundwater	Drill holes would be closed per NRS 534	46
Lands use and access	All access roads to drill projects would be reclaimed, including pre 1981 roads that are not part of the transportation plan and would not otherwise require reclamation	BMM plans to reclaim all new disturbance and disturbance on reclaimed roads.	
Soils	Wind and water erosion	Use overland travel as much as possible Store growth media in berms alongside disturbance Seed with interim seed mix if berms will remain over the growing season	24, 26, 27, 39-42
Vegetation including woodlands	Loss of native vegetation	Reclaim with interim and final seed mixes	25, 44, 45, 48
Livestock/grazing	Loss of forage Limit access around active areas	Reclaim as soon as activities are complete Temporary fencing of trenches/sumps as necessary	33,
Wildlife, including Migratory Birds	Migratory birds nesting Mule deer migration Limit access around active areas	Conduct nesting surveys if disturbance needs to occur between May 1 and July 15 Reclaim as soon as activities are complete Fence trenches/sumps as necessary	34-37
Wild horses	Loss of forage	Reclaim as soon as activities are complete	33

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Critical Element/ Resource	Potential Issues To Consider	Actions	Applicable BMP
and burros	Limit access around active areas	Temporary fencing of trenches/sumps as necessary; fences will be flagged	
Recreation	Localized use	Reclaim as soon as activities are complete	1-3, 5, 41, 47, 48
Visual Resources	Further loss of visual resources	Reclaim to restore vegetation and previous landform line	42, 44, 48

¹ The referenced Best Management Practices are being considered for inclusion into a upcoming Resource Management Plan for the Ely District. Although these BMPs may change for the final Resource Management Plan, the action items, as shown, will be followed by BMM for this Exploration Plan.

² See Appendix A

2.2 Alternatives to the Proposed Action

No alternatives other than the “No Action” alternative were identified for this EA. No other alternatives need to be analyzed to address unresolved conflicts concerning alternative uses of available resources.

2.2.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be approved by the BLM. The Alligator Ridge Mine would remain in closure with no further disturbance. After final release there would be the potential for additional small-scale (under five acre) exploration notices which do not require NEPA.

2.2.2 Alternatives Considered But Eliminated From Further Analysis

There are no feasible alternative locations for the proposed exploration activity because the Project location is determined by the specific favorable geologic conditions. Therefore, alternative locations are not viable alternatives and are not evaluated further in this EA.

3.0 Affected Environment

3.1 Introduction

The Alligator Ridge Mine is located at the southwest base of Alligator Ridge in Long Valley which is south of the Ruby Mountain chain. Ruby Valley is located about 23 (air) miles north of the proposed activities. Elevations at the project location range from approximately 6,400 feet to 6,700 feet above mean sea level. The topography in the area is typical of that found in the Basin and Range Physiographic Province

of the western United States. Figure 4 shows the general location of the Alligator Ridge Mine with respect to surrounding mountain ranges and valleys.

The Critical Elements of the Human Environment are listed in Table 4. Elements that may be affected are further described in this EA. Rationales for those elements that would not be adversely affected are also listed in Table 4.

Table 4: Critical Elements of the Human Environment and Rationale for Detailed Analysis for the Proposed Exploration Project

Critical Element	No Effect	May Affect	Not Present	Rationale
Air Quality		X		Dust and emissions may be increased locally
Areas of Critical Environmental Concern (ACEC)			X	Resource is not present.
Cultural Resources		X		Cultural surveys were required. BMM plans to avoid known eligible cultural sites.
Environmental Justice	X			No minority or low-income groups would be affected by disproportionately high and adverse health or environmental effects because this action only involves the change in land status/ownership.
Farm Lands (prime or unique)			X	Resource is not present.
Flood Plains			X	Resource is not present.
Native American Religious Concerns		X		There are no known issues of concern to local tribes. BLM would consult with local Native American tribes.
Non-native, Invasive Species		X		Surface disturbance may increase the risk of non-native, invasive species establishment.
Threatened, Endangered, and Special Status Species		X		Populations of species afforded protection under the Endangered Species Act (ESA) and under BLM policy may occur in the Project Area.
Wastes (hazardous or solid)		X		Wastes are generated and spills may occur. BMM would control wastes in accordance with state and federal regulations.
Water Quality (drinking/ground)		X		Ground water could be encountered. Drill holes would be closed in accordance with NRS 534 to protect groundwater resources. Seeps, springs, and riparian areas would be avoided. Drilling activity would be kept to a minimum distance of 100 feet from any drainages, seeps or springs that are actively flowing.

Wetlands/ Riparian			X	Resource is not present
Wild and Scenic Rivers			X	Resource is not present.
Wilderness			X	The Proposed Action does not occur within any Wilderness Area, Wilderness Study Area, or Wilderness Inventory Area.

In addition to the Critical Elements of the Human Environment, the BLM must consider other resources that occur on public lands, or issues that may result from the implementation of the Proposed Action. The potential resources, uses, and issues that may be affected are listed in Table 5. A brief rationale for either considering or not considering the issue or resource further is provided. The resources, uses, and issues that are considered in the EA are described in the Affected Environment section of this EA and are also analyzed in the Environmental Consequences section.

Table 5 Other Resources and Issues, and Rationale for Detailed Analysis for the Proposed Exploration Project

Resource or Issue	No Effect	May Affect	Not Present	Rationale
Lands/Access		X		Some existing access roads may be reclaimed. New roads opened up for a period of time. Most land uses would not be affected.
Soils		X		Additional soils would be temporarily disturbed.
Geology/ Minerals	X			Exploration activities would not remove large quantities of mineral resources from the Project Area.
Paleontological Resources	X			Paleontological resources identified in the vicinity of the Project Area do not have critical scientific or educational value (FEIS, 1995).
Vegetation/ Forestry		X		Vegetation would be disturbed as part of the Proposed Action. The Project Area is located with piñon/juniper woodland type.
Livestock Grazing/Range		X		Approximately 4 acres of range would temporarily be changed.
Wildlife (Including Migratory Birds)		X		Approximately 4 acres of habitat would temporarily be changed. Mule deer migration may be affected.
Wild Horses and Burros		X		Approximately 4 acres of habitat would temporarily be changed.

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Recreation		X		Recreation opportunities could be temporarily reduced
Visual Resource Management		X		The Project Area is located within visual resource management class IV. Line, form and color may be affected.
Socioeconomics	X			Exploration activities would not alter the current economic status of the area.

Based on the review of existing baseline data or surveys conducted in preparation of this EA, BLM specialists have identified the following for further analysis.

- Air
- Cultural resources:
- Hazardous materials (wastes – hazardous or solid)
- Land use and access:
- Livestock/grazing;
- Native American religious concerns;
- Non-native invasive species;
- Recreation;
- Soils;
- Threatened, endangered species and special status species;
- Vegetation including woodlands ;
- Visual resources;
- Water quality;
- Wildlife, including migratory birds
- Wild horses and burros;

3.2 Proposed Action and Alternatives

The description of the affected environment for the No Action Alternative would be the same as that for the Proposed Action.

3.2.1 Air Resources

The Project Area is within the Long Valley hydrographic basin. The existing air quality is typical of the largely undeveloped regions of the western United States. For the purposes of statewide regulatory planning, this area has been designated as unclassified for all pollutants that have an ambient air quality standard.

3.2.2 Cultural Resources

Both prehistoric and historic sites are present in the Project Area. The Project Area never had a block cultural survey prior to mining. Since then, spot class III surveys have been conducted on an as needed basis. Kautz Environmental completed the archeology survey for the proposed action in the fall of 2007 and the report was sent to the Ely District BLM.

3.2.3 Hazardous Materials (Wastes – Hazardous or Solid)

Past spills of hazardous materials within the Project Area have been remediated in compliance with state and local regulations. Unreported spills by other operators may have occurred. A large oil spill occurred in the administrative area during mine operations. It has since been remediated.

3.2.4 Land Use and Access

The Project Area is located in White Pine County. Access for the proposed project from the east is via U.S. Highway 50 and the Ruby Marsh Road. Access from the west is via State Highway 892/228. The only transportation routes within the Project Area are county roads and unimproved gravel roads. Numerous two-track roads exist throughout the Project Area.

3.2.5 Livestock and Grazing Management

The Alligator Ridge Mine lies within the Warm Springs Grazing Allotment. The Warm Springs Grazing Allotment consists of 23,995 animal unit months (AUMs) and is categorized as "improve" (I) according to the Egan Resource Area Record of Decision. Barrick Gold U.S. is the authorized permit holder for livestock grazing in the area.

3.2.6 Native American Religious Concerns

Before making decisions or approving actions affecting public lands, the BLM must determine whether Native American interests would be affected, observe pertinent information gathering and consultation requirements, and document how this was done. Native American consultation is the process of: identifying and seeking input from appropriate Native American governing bodies, community groups, and individuals. The consideration of their interests is a necessary and integral part of the BLM's decision making process (BLM 1994).

BLM conducts periodic Native American consultations with the Ely, Battle Mountain, and Duckwater Shoshone Tribes. The project was coordinated with the various tribes during the tribal coordination

meeting that occurred on February 14, 2008 by Elvis Wall, BLM Native American Coordinator. No comments or concerns were received.

3.2.7 Noxious and non-native, invasive weeds

Anytime there is soil disturbance and removal of native vegetation, the potential exists for the introduction of noxious and non-native, invasive weeds into the area. The invasive weeds of concern for this area include halogeton (*Halogeton glomeratus*), Russian thistle (*Salsola kali*), and cheatgrass (*Bromus tectorum*). Bull thistle (*Cirsium vulgare*), Musk thistle (*Carduus nutans*), and hoary cress (*Lepidium draba*) have been documented on site. Other noxious and non-native, invasive weeds known to occur in the area include spotted knapweed (*Centaurea stoebe* spp. *micranthos*), Canada thistle (*Cirsium arvense*), Russian knapweed (*Acroptilon repens*), Scotch thistle (*Onopordum acanthium*), tall whitetop (*Lepidium latifolium*), and black henbane (*Hyoscyamus niger*).

Bull thistle has been documented on site. Other noxious and non-native, invasive weeds known to occur in the area include spotted knapweed (*Centaurea stoebe* spp. *micranthos*), Musk thistle (*Carduus nutans*), hoary cress (*Lepidium draba*), Poison hemlock (*Conium maculatum*), Russian knapweed (*Acroptilon repens*) and black henbane (*Hyoscyamus niger*).

Bald Mountain Mine employed SRK Consulting to prepare a noxious weed inventory for the general area of Bald Mountain Mine to Alligator Ridge Mine. This information is in the draft Bald Mountain Mine Baseline Report (SRK August 2007). The report indicated bull thistle infestation in the northern portion of the Alligator Ridge Project Area. Due to the time of year, the presence of other potential noxious and non-native, invasive weeds in the area would be hard to detect. Alligator Ridge mine continues to be part of the noxious weed treatment and monitoring weed plan for the Barrick, Bald Mountain Mine region.

3.2.8 Recreation

The proposed Project Area is generally isolated and undeveloped with no facilities. Developed recreational opportunities are relatively sparse in this part of Nevada and it is assumed that users would travel to remote areas of the general region, particularly on weekends to recreate. General public recreation in the area would include activities associated with roaded, natural, and semi-primitive motorized classes. Activities would primarily include off-highway vehicle use, dirt bike riding, hunting, and camping. Other recreational activities could include mountain biking, horseback riding, sightseeing, outdoor photography, nature study, wildlife viewing, bird watching, and rock collecting. Under the Egan RMP the proposed Project Area is located in an area “open” to off-road vehicle use.

3.2.9 Soils

The Alligator Ridge Mine is located in the Basin and Range physiographic province. The province is characterized by roughly parallel, north-south trending mountain ranges separated by alluvium-filled valleys. According to the Soil Survey for Western White Pine County, the predominant soil for drilling and road construction activity is the Urmafot association. The Urmafot soil series is a very gravely loam.

Soil depth is typically about 9 to 20 inches to hardpan. Average annual precipitation is 9-12 inches. The soils are moderately permeable, moderately alkaline, and with medium runoff potential. A couple of the higher elevation drilling sites may encounter the Pookaloo soil series which tend to be a shallow loam. Distinctive vegetation associated with these soils are big sagebrush, black sagebrush, needlegrass, ricegrass, and bluebunch wheatgrass. No wetlands soils are found in the project area.

3.2.10 Special Status Species (Including Federally Listed, Proposed, and Candidate Species, State Protected Species, and BLM Sensitive Species)

The U.S. Fish and Wildlife Service (USFWS) database, Nevada Natural Heritage Program database (NNHP), and the Nevada Department of Wildlife were queried in June 2004 during the preparation for the Programmatic EA. As the reader may recall, this EA is tiered to the 2004 October Programmatic EA. The databases were queried for the presence of special status species and species of concern for the region. The state sensitive species include some or all of the USFWS former Category 2 species, which occur in Nevada. Under current BLM policy, the agency must ensure that actions authorized, funded, or carried out, do not contribute to the need to list any of these species as threatened or endangered. The Ely BLM District Special Status Species list was reviewed by Ely BLM Wildlife specialist, Marian Lichtler. Species that might occupy the area of the proposed action were added to the list and presented in Table 6.

Table 6: Special Status Species That Have The Potential to Occur In Or Near the Project Area

Common Name	Scientific Name	Status
Bald Eagle	<i>Haliaeetus leucophalus</i>	State Protected
Ferruginous Hawk	<i>Buteo regalis</i>	Species of concern
Northern Goshawk	<i>Accipiter gentiles</i>	Special Status Species
Western Burrowing Owl	<i>Athene cunicularia hypugea</i>	Species of concern
Greater Sage Grouse	<i>Centrocercus urophasianus</i>	Species of concern
Pygmy Rabbit	<i>Brachylagus idahoensis</i>	Special Status Species
Pallid bat	<i>Antrozous pallidus</i>	BLM Special Status Species
Pygmy rabbit	<i>Brachylagus idahoensis</i>	BLM Special Status Species
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	BLM Special Status Species
Big brown bat	<i>Eptesicus fuscus</i>	BLM Special Status Species
Spotted bat	<i>Euderma maculatum</i>	BLM Special Status Species

Silver-haired bat	<i>Lasionycteris noctivagans</i>	BLM Special Status Species
Hoary bat	<i>Lasiurus cinereus</i>	BLM Special Status Species
California myotis	<i>Myotis californicus</i>	BLM Special Status Species
Small-footed myotis	<i>Myotis ciliolabrum</i>	BLM Special Status Species
Long-eared myotis	<i>Myotis evotis</i>	BLM Special Status Species
Little brown myotis	<i>Myotis lucifugus</i>	BLM Special Status Species
Fringed myotis	<i>Myotis thysanodes</i>	BLM Special Status Species
Long-legged myotis	<i>Myotis volans</i>	BLM Special Status Species
Western pipistrelle bat	<i>Pipistrellus hesperus</i>	BLM Special Status Species
Brazilian free-tailed bat	<i>Tadarida brasiliensis</i>	BLM Special Status Species
Northern goshawk	<i>Accipiter gentiles</i>	BLM Special Status Species
Golden eagle	<i>Aquila chrysaetos</i>	BLM Special Status Species
Short-eared owl	<i>Asio flammeus</i>	BLM Special Status Species
Long-eared owl	<i>Asio otus</i>	BLM Special Status Species
Juniper titmouse	<i>Baeolophus griseus</i>	BLM Special Status Species
Ferruginous hawk	<i>Buteo regalis</i>	BLM Special Status Species
Swainson's hawk	<i>Buteo swainsoni</i>	BLM Special Status Species
Greater sage grouse	<i>Centrocercus urophasianus</i>	BLM Special Status Species
Prairie falcon	<i>Falco mexicanus</i>	BLM Special Status Species
Bald eagle	<i>Haliaeetus leucocephalus</i>	BLM Special Status Species
Yellow-breasted chat	<i>Icteria virens</i>	BLM Special Status Species
Loggerhead Shrike	<i>Lanius ludovicianus</i>	BLM Special Status Species
Lewis's woodpecker	<i>Melanerpes lewis</i>	BLM Special Status Species
Flammulated owl	<i>Otus flammeolus</i>	BLM Special Status Species
Vesper sparrow	<i>Pooecetes gramineus</i>	BLM Special Status Species

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Red-naped sapsucker	<i>Sphyrapicus nuchalis</i>	BLM Special Status Species
Gray vireo	<i>Vireo vicinior</i>	BLM Special Status Species

The USFWS cited no listed, proposed, or candidate species occurring in the Project Area.

The Nevada Natural Heritage Program reported the pygmy rabbit (*Brachylagus idahoensis*), a Special Status Species, occurring near the Project Area. The pygmy rabbit is found throughout much of the Great Basin and is primarily associated with areas of tall dense sagebrush and friable soils suitable for establishing a burrow system (Jameson and Peeters 1988). A field survey was conducted by SRK consulting on November 13, 2007 to determine the presence or absence of pygmy rabbits within the area of the proposed action. The full report called, “Bald Mountain Mine 2007-2008 Winter Drilling Program Pygmy Rabbit Survey, November 2007” is available at the Ely Field Office BLM. The relevant sections are quoted below:

“Of the five vegetation types included in the survey areas, only the big sagebrush community was suitable habitat for pygmy rabbits. In most of these areas, the brush was less than three feet in height, indicating shallow soils. These sites had low productivity and depicted poor habitat conditions. No pygmy rabbits were found in these shorter stands of low productivity habitat.

However, pygmy rabbits and/or their sign were observed within the Basin big sagebrush communities found in three isolated drainage areas. These drainages extend into the Alligator Ridge Mine Plan of Operations, but not within the proposed disturbance areas for this proposed action. All three drainages had areas where pygmy rabbits were currently active and areas where abandoned burrows and aged scat were observed, indicating previous use, but not current use.

These small isolated habitats extending into the Alligator Ridge Mine Plan of Operations provide relatively few pygmy rabbits compared to the extensive areas of pygmy rabbit habitat in Long Valley and in Newark/Huntington Valleys away from the mine activity.” (SRK 2007). See Figure 6 (Pygmy rabbit study area – SRK 2007).

The Project Area also provides suitable foraging and nesting habitat for the ferruginous hawk (*Buteo regalis*), northern goshawk (*Accipiter gentiles*), and western burrowing owl (*Athene cunicularia hypugea*). These special status species have the potential to occur within the Project Area.

The Nevada Department of Wildlife identified the bald eagle (*Haliaeetus leucocephalus*), as having potential to occur in the area. The bald eagle is no longer on the threatened and endangered species list, but continues to be protected under the Bald and Golden Eagle Protection Act. Bald eagles winter in Nevada in areas that provide foraging habitat. It is possible that this species may occasionally pass through the area while hunting and would be expected to use the Ruby Marshes approximately 25 miles north of the Project Area.

Sage grouse brooding areas and leks have not been noted or surveyed within the Alligator Ridge plan of operations by BLM or NDOW specialists. The nearest recorded lek is about 2 miles to the north east at the edge of the more open Long Valley. However, the area is within general nesting, summer, and winter habitat. This area is within the Butte/Buck Mountain/White Pine Sage Grouse Population Management Unit (PMU). The White Pine Local Planning Group has identified research projects involving removal of piñon-juniper woodland to improve sagebrush habitat and removal of piñon-juniper adjacent to springs to enhance brood habitat within this PMU.

The BLM special status species list includes bats, hawks, and migratory birds. Bats likely utilize the pinyon juniper habitat. It is likely that not all of the bats, hawks, and birds listed in Table 6 would be found in the project area at any one time. These just have the potential to occupy or pass through the area. Migratory birds, especially, could utilize the area on occasion for nesting.

3.2.11 Vegetation

Portions of the area of the Proposed Action are disturbed as a result of previous mining activities. Some revegetation has been relatively successful, however other areas are dominated by weedy invaders such as halogeton, Russian thistle, cheatgrass, and mustards. Native vegetation species present within the Project Area include piñon/juniper (*Pinus monophylla* and *Juniperus sp.*), mountain big sagebrush, Basin wild rye (*Leymus cinereus*), bluebunch wheatgrass (*Pseudoroegneria spicata ssp.spicata*), bottlebrush squirreltail (*Elymus elymoides*), Indian ricegrass (*Oryzopsis hymenoides*), Rabbitbrush, needlegrass (*Stipa*), mountain brome, Sandberg bluegrass, sedges (*Carex*), balsamroot (*Balsamorhiza*), lupine (*Lupinus*), bastard toadflax (*Comandra umbellata pallida*), groundsel (*Senecio*), and buckwheat (FEIS 1995).

3.2.12 Visual Resource Management

The Project Area is located in the northern Great Basin section of the Basin and Range Physiographic Province. The Great Basin is characterized by a rhythmic pattern of isolated mountain ranges and broad sweeping basins. Clear skies and broad open vistas characterize this landscape. The Alligator Ridge Mine is located in a remote area not adjacent to any major highway route, or visible from a key observation point. The project area is within a class 3 and class 4 visual resource area. The Class 3 objective allows for moderate change but it would not dominate the view shed of the casual observer. A good portion of the Alligator Ridge Mine is within the Class 3 management area. The mine was established prior to the designation of the resource management ratings for the area. The class 4 objective provides for management activities which require a major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high.

3.2.13 Water Quality

Water quality is broken out by resource to include both surface water and ground water as described below:

3.2.13.1 Surface Water

The Alligator Ridge Mine lies within the Long Valley hydrologic basin, which is a sub-basin of the Tonopah hydrologic subregion of the Great Basin Region Comprehensive Framework Study (Water Resources, 1971). The area is characterized by long, narrow valleys containing small, intermittent streams that empty into valley bottoms, where surface waters evaporate or infiltrate into the soil. No lakes, permanent streams, or springs are found within the Alligator Ridge Mine Plan of Operations. The foothills and the valley in which the mine facilities are located drain towards Long Valley. Snowmelt and rainfall events may cause small amounts of water to (very occasionally) flow short distances along the drainage bottoms. These flows are diverted around process components by the ditches, berms, and culverts per existing General Stormwater Permit requirements. There are presently no downstream users of the limited surface water that originates on the mine site. A user would be hard pressed to collect any surface water except during the somewhat rare, and usually short, meteorological events (rain storms and rapidly melting snow) that occur in the area.

3.2.13.2 Groundwater

The following information was extracted from the March 14, 2000 report by Brown and Caldwell entitled “Hydrogeologic, Geochemical, and Engineering Design Support for Closure of Heap Leach Facilities at the Alligator Ridge Mine.” This document is on file at the Ely Field Office BLM.

Information pertaining to the depth to groundwater in the ARM area is largely inferred from exploration and condemnation drill holes in the mine area, two water supply wells, and regional water level data. The depth to groundwater beneath the ARM heap leach pads is estimated to be approximately 750 feet below ground surface. The depth to ground water at the flatter areas south of the former leach pads is estimated to be about 480 feet below ground surface based on water level measurements from two water supply wells.

The direction of flow or the regional groundwater aquifer is inferred to be from the northeast towards the southwest and indicates interbasin flow from Long Valley towards Newark Valley. These are inferred from water balance calculations for the two basins. The regional aquifer flows through Paleozoic carbonate rocks. As a result of this interaction, bicarbonate concentrations are typically elevated and the concentration of total dissolved solids is generally greater than 250 mg/L. Water quality analyses of the wells have been conducted at quarterly intervals since 1993 and have consistently indicated good quality groundwater. The ground water temperature was measured at 109 degrees F at the time of well construction in 1980. This elevated temperature is indicative of relatively deep circulation in the subsurface and has been considered to be representative of the regional groundwater flow system in the southern Ruby Mountains.

3.2.14 Wildlife, including Migratory Birds

Wildlife species presently occurring in the area of the Proposed Action include species common to the Nevada Great Basin: coyotes, mule deer, pronghorn antelope, jack rabbits, cottontails, ground squirrels, sage grouse, mourning doves, and chukar. Some bat species may utilize the woodland areas. The site of the Proposed Action falls within designated mule deer winter habitat identified by the Nevada

Department of Wildlife and BLM (Egan Resource Area Record of Decision, 1987). The Proposed Action is not projected to impact mule deer migration routes. It has been estimated that approximately 137 of 262 reported bird species, including migratory birds, within the Ely BLM district, can be expected to occur within the Alligator Ridge Mine area (Cherry Creek URA, 1978.)

The Nevada Department of Wildlife (Rory Lamp, January 2008) prepared a list of species identified in the South Ruby Allotment, which includes the area of the proposed action. The list is a combination of wildlife sighted in the region and a best prediction of wildlife that could exist in this area in all seasons and in optimum habitat conditions. The list is presented in Appendix D.

3.2.15 Wild Horses

The Proposed Action lies entirely within the Buck and Bald Wild Horse Herd Management Area (HMA). The Buck and Bald HMA has an appropriate management level (AML) established at 423 wild horses.

4.0 Environmental Consequences of the Proposed Action

4.1 Air Resources

Proposed Action

Direct, temporary impacts to air quality would result from drilling activities. However, the impacts would be transitory and temporary, limited in duration, and would end at the completion of this drilling program. Impacts would result from fugitive dust as well as gaseous pollutants such as nitrous oxides, carbon monoxide, and sulfur dioxide. Sources of fugitive dust would include clearing, earth moving, hauling, drilling, truck loading, wind erosion from stockpiles, and ore handling. Sources of gaseous pollutants would include equipment exhaust emissions including mobile equipment, light vehicles and generators. BMM utilizes operating controls such as watering main roads and the use of surfactants to control fugitive dust, and preventive equipment maintenance to control vehicle emissions.

No Action Alternative

There would be no transitory or temporary impact to air quality from the proposed drilling program under the No Action Alternative. These effects could occur on a more intermittent basis in the future if small scale mining notices were approved after the Alligator Ridge mine was fully closed and released.

4.2 Cultural Resources

Proposed Action

Cultural resources would be avoided during ground disturbing activities. One drill location, PVY-8 will require an archeological monitor during ground disturbing activities. The construction of the road between PVY2 and PVY3 will also require an archeological monitor due to proximity to identified cultural resources nearby. Since all cultural sites would be avoided, there would be no direct, indirect, or residual impacts to cultural resources.

No Action Alternative

There would be no further disturbance and therefore no further risk of disturbing cultural artifacts or sites under the No Action Alternative until the mine was completely closed and released. After that disturbance could occur in the future if small scale mining notices were approved.

4.3 Hazardous Materials – (Wastes- Hazardous or Solid)

Proposed Action

BMM would handle hazardous materials according to state and federal regulations and SOPs. Any spills of petroleum products would be cleaned and reported according to state regulations. Solid waste would be disposed off site at an approved facility.

No Action Alternative

There would be no further risk from hazardous materials from the proposed exploration drilling program under the No Action Alternative. Additional risks could occur on a more intermittent basis in the future if small scale mining notices were approved after the Alligator Ridge mine was fully closed and released.

4.4 Land Use and Access

Proposed Action

The Proposed Action would re-disturb some reclaimed roads within the project area as well as create some new roads. The re-opened and new roads would be reclaimed at the end of the project. Therefore no long term change would occur to existing land use and access. The temporary access may be used by hunters or other users prior to reclamation.

No Action Alternative

There would be no change, even temporary changes, to land use and access under the No Action Alternative. However, changes could occur on a more intermittent basis in the future if small scale mining notices were approved after the Alligator Ridge mine was fully closed and released.

4.5 Livestock/Grazing

Proposed Action

There would be a short term loss of 4 acres of vegetation during the life of the project. Unless further mining disturbance is permitted, these 4 acres would be reclaimed following drilling. Most of the previously reclaimed exploration roads around the Alligator Ridge mine have been highly successful in revegetation. Any areas that were not successful in revegetation and that will be re-opened during this project will have a second seeding. Where revegetation is successful, the amount of grasses and forbs desirable for grazing actually increases as compared to the adjacent undisturbed vegetation. There is a chance that revegetation in some areas will be slow to re-establish or result in undesirable weedy

species such as cheatgrass, halogeton, and Russian thistle. In general, those areas that previously experienced successful revegetation should re-establish well a second time. Those areas that did not succeed will either improve with a second seeding or remain as weed dominated areas. Over many years, the native vegetation may re-establish. With additional new vegetation disturbance these problem areas may increase. Since Barrick is the grazing lease holder for the area, any livestock grazing of the newly establishing vegetation would be closely monitored and no grazing conflicts due to mining are likely to occur during the life of mining operations. The net result of the proposed action could be an increase in available forage for livestock if the majority of revegetation efforts are successful.

No Action Alternative

There would be no change in potential forage under the No Action Alternative. There would be no temporary loss of forage and also no potential increase in forage as compared to the Proposed Action. However, there could be additional intermittent disturbance in the future if small scale mining notices were approved after the Alligator Ridge mine was fully closed and released.

4.6 Native American Religious Concerns

Proposed Action

No Native American religious concerns were brought forward during the BLM consultations that occurred on February 14, 2008 or throughout the 45 day response time following the consultation.

No Action Alternative

There would be no Native American religious concerns under the No Action Alternative since the proposed action would not occur.

4.7 Noxious and non-native, invasive weeds

Proposed Action

The introduction of noxious and non-native, invasive weeds could result from impurities in the proposed seed mix for reclamation activities, by contaminated ground disturbing equipment entering the site, or through natural vectors. The use of certified weed-free seed for reclamation and continuation of noxious weed control efforts by the BMM (i.e., vehicle washing, and weed control program) should reduce the risk that noxious and non-native, invasive weeds would become introduced or established on the reclamation site. The Noxious and Invasive Weed Risk Assessment (Appendix C) prepared for the Proposed Action indicated the overall risk of noxious weed establishment is currently moderate.

No Action Alternative

Under the No Action Alternative there would be less risk of introducing noxious and non native invasive weeds to the project area. The Bald Mountain Mine noxious weed control program would continue regardless of whether the proposed action occurred, since that is a part of the overall existing plan of operation commitment. Additional disturbance and noxious weed spread risk could occur on an

intermittent basis in the future if small scale mining notices were approved after the Alligator Ridge mine was fully closed and released.

4.8 Recreation

Proposed Action

The exploration disturbance areas associated with the project could result in a short-term, temporary reduction of recreation opportunities for hunters, dirt bike users, hikers and rock collectors. In the long-term, the overland drill roads would be reclaimed and pre-exploration recreation activities would be expected to return to the area at the conclusion of exploration.

Drilling activities could create disturbances that may interfere with recreational pursuits within the Alligator Ridge Mine Plan of Operations. Construction of access routes, drill pads, etc., could affect the abundance of wildlife species available in the area for viewing and/or hunting. On the other hand, hunters may appreciate the increased access by vehicle into the area, even if it is temporary. The reader may wish to refer to the wildlife section for more information on impacts to big game and hunting. Also the sight and sound of exploration activities would diminish the solitude, naturalness, primitive and unconfined recreation opportunities desired by many outdoor enthusiasts. However, the existing disturbance characteristics of the Alligator Ridge Mine are likely not to attract those who are looking for a natural and primitive recreational experience. There are abundant and better opportunities for this type of experience throughout the region. Those who choose recreational experiences within the Alligator Ridge plan of operations are likely choosing it to view the mining disturbances. The proposed exploration program would not change the long term existing access to public lands within the Project Area for recreational uses. Construction of new roads could temporarily improve access, and the reclamation of these roads may be a disappointment to some. Some recreationists would temporarily cease using certain areas due to drilling activities. Dirt bike users who have left tracks up and down the reclaimed leach pad may refrain from this activity during the presence of drilling operations. This would be beneficial since their actions damage the fragile vegetation and increase the potential for erosion.

No annual commercial or competitive Special Recreation Permit events occur within this area, so there would be no conflicts between organized recreation events and drilling activities.

Indirect impacts may occur as a result of the drilling activity due to an increased noise level during drilling activity that may decrease the quality of the recreational activity. Because the drilling program is scheduled for the winter months during the time of most limited recreational use, these impacts, if any, would be minimal. Residual impacts to recreational land use are not anticipated.

No Action Alternative

Under the no action alternative there would be no change to existing recreational opportunities. The short term use of new and re-opened roads would not be available to motorized users. The effects could occur on a more intermittent basis in the future if small scale mining notices were approved after the Alligator Ridge mine was fully closed and released.

4.9 Soils

Proposed Action

The proposed action would directly impact 4 acres of soil due to drilling and road construction activities. Types of impacts would include vegetation clearing, excavation, grading, and salvage of growth media. Soil disturbances would impede maturation of soil development, degrade soil structure, and hinder soil biological activity. Additionally, exposed soils are susceptible to wind and water erosion; however, this risk would be reduced by interim revegetation and best management practices. Soils are expected to recover and continue as a productive resource following successful reclamation.

No Action Alternative

There would be no large scale soil disturbance under the No Action Alternative. Soil resources would remain mostly unchanged. Effects could occur on a more intermittent basis in the future if small scale mining notices were approved after the Alligator Ridge mine was fully closed and released.

4.10 Special Status Species (Including Federally Listed, Proposed, and Candidate Species, State Protected Species, and BLM Sensitive Species)

Proposed Action

The Nevada Natural Heritage Program reported in 2004 that no special status plant species are known to occur on or near the Project Area; therefore no impacts to plant species would be expected to occur from the Proposed Action. (Remember that this EA is tiered to the 2004 Programmatic EA.) The USFWS reported no listed, proposed, or candidate species occurring in the Project Area. Therefore, impacts to any species listed under the Endangered Species Act, as amended, are not anticipated.

The proposed drill areas are not within occupied pygmy rabbit habitat or areas considered to be good habitat for these rabbits. There is good habitat and known occurrences in the larger and more populous big sagebrush habitat located in the adjacent long valley. Additional statements from SRK are included in the November 2007 Pygmy Rabbit report that clarifies the conclusion such that the proposed action is not expected to have any impact on pygmy rabbit individuals or populations.

There are no known active sage grouse leks within the boundaries of the vantage exploration area. Therefore, no direct, indirect, or residual impacts to sage grouse are projected.

Potential impacts to other special status species are not projected. The burrowing owl is not expected to be in the Project Area. Ferruginous hawk, and northern goshawk may use the Project Area, but the loss of habitat is not expected to affect these species. BLM special status bats, hawks and birds may pass through or occupy the project area. The minimal number of additional trees taken down due to the proposed action, as well as the large amount of adjacent habitat, would minimize the impact to these very mobile species. In addition, Barrick would follow the migratory bird species mitigation where no surface disturbance would occur without prior inventory between May 1 and July 15 so as not to disrupt nesting birds.

In conclusion, no residual impacts to special status species and their habitat would result from the Proposed Action following reclamation and reestablishment of the vegetation.

No Action Alternative

There would be no interim vegetation loss or physical disturbance to wildlife and wildlife habitat under the No Action Alternative. However, additional disturbance could occur on a more intermittent basis in the future if small scale mining notices were approved after the Alligator Ridge mine was fully closed and released.

4.11 Vegetation

Proposed Action

The direct impact to vegetation would be the removal of 4 acres of vegetation, all of which would be reclaimed. The reclaimed areas would initially have a different plant composition than the existing plant communities. The gradual change back to the like, adjacent, undisturbed plant community would occur over a period of years or decades, depending on the site. However, the additional plant species and early seral stages created by the reclamation would increase the overall regional plant diversity and community structure. For the first few growing seasons, a temporary increase in annual weedy species would likely occur, however, the weedy species should eventually be replaced by desired perennial communities. In some cases there can be a permanent shift to undesirable species such as cheatgrass.

There would be some removal of piñon/juniper trees from the Project Area which would create openings and clearings within the canopy. There have been deliberate chaining projects in the region in years past to accomplish the same thing as wildlife enhancement projects. The pinyon-juniper trees are widely distributed throughout the region of the Project Area. Following reclamation it is expected that these trees would gradually re-colonize the disturbed areas over time.

No Action Alternative

There would be no change to vegetation under the No Action Alternative. New areas within the mine plan would not be disturbed and existing reclamation efforts would not be re-disturbed. However, additional disturbance could occur on a more intermittent basis in the future if small scale mining notices were approved after the Alligator Ridge mine was fully closed and released.

4.12 Visual Resources

Proposed Action

The proposed project would result in visual impacts principally affecting the elements of line and color. Horizontal and shallow diagonal lines from the drill roads and exploration trails would create moderate line contrasts with the characteristic landscape. Vegetation removal associated with road and drill pad construction would result in low to high color contrasts.

For visual resources, the Alligator Ridge Mine plan of operations is currently within a high disturbance area. Although many of the open pits were completely backfilled, there remain some partly filled pits as well as pits that were not reclaimed at all. The pre-disturbance condition of the mine was a pinyon-juniper dominated landscape. The removal of these trees due to mining activities creates a visual contrast, even in areas that have successful revegetation. The gradual re-colonization of the pinyon juniper habitat will take many years. Additional road building under the proposed action would further the amount of contrast. Re-disturbance of reclaimed roads would slow the process whereby pinyon juniper trees might re-establish over time. However, the three to four years of delay must be viewed in balance with the 20 or more years it might take to re-establish these trees such that the disturbance blends with the surrounding terrain.

The proposed action would meet the goals of both the Class 3 and Class 4 visual resource management. For Class 4, the objective allows for major modification and high levels of change. This has already occurred with the Alligator Ridge Mine and the proposed action would fit well within the existing disturbance. The Class 3 objective is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Drilling within the disturbance frame work of the Alligator Ridge mine would meet this criteria.

No Action Alternative

There would be no additional impact to visual resources under the No Impact Alternative. The current impacts from previous mining would remain and slowly change to blend in with surrounding terrain over time. Open pits would remain the same in either alternative. There could be additional disturbance on a more intermittent basis in the future if small scale mining notices were approved after the Alligator Ridge mine was fully closed and released. The management criteria for Class 3 and 4 objectives would be met.

4.13 Water Quality

4.13.1 Surface Water

Proposed Action

During periods of adverse conditions such as thawing, heavy rains, snow, flooding, or drought, existing off-road activities that can create excessive surface rutting may be suspended and proceed at the direction of the Authorized Officer. Sumps would contain drilling mud but would be contained so as not to enter drainages. Erosion control structures on access roads would be installed as necessary. Therefore, no direct, indirect, or residual impacts to surface water resources are projected to result from the Proposed Action.

No Action Alternative

There would be no additional risk of impact to groundwater under the No Action Alternative. However, potential impacts could occur on a more intermittent basis in the future if small scale mining notices were approved after the Alligator Ridge mine was fully closed and released.

4.13.2 Groundwater

Proposed Action

Drill holes would be abandoned per NRS 534. Types of impacts to groundwater resources could include aquifer contamination from drilling if drill holes are left open. Because drill holes would be closed according to NRS 534, no direct, indirect, or residual impacts to groundwater resources are projected. The depth to groundwater, along with the confined aquifer, makes the likelihood of impacts to the underlying aquifer negligible.

No Action Alternative

There would be no additional risk of impact to groundwater under the No Action Alternative. Additional drilling activities could occur on a more intermittent basis in the future if small scale mining notices were approved after the Alligator Ridge mine was fully closed and released.

4.14 Wildlife (Including Migratory Birds)

Proposed Action

The Proposed Action would result in the short-term general habitat loss of 4 acres. The habitat would be changed to an earlier seral community consisting of grasses and shrubs. The proposed activities would result in: direct loss or disturbance to forage, breeding areas, and thermal cover; indirect impacts from displacement of animals from the Project Area into adjacent habitats which are potentially at their carrying capacities (resulting in potential loss of these individuals from the population); and further fragmentation of the habitat from project implementation. Concurrent reclamation would be occurring, so the disturbance would be in various stages of re-growth at any one time.

Mule deer are one of the species of concern in the general area since the area is within a 295,000-acre crucial deer winter range designated by NDOW. The Proposed Action would result in the short-term loss of 4 acres of this habitat. This habitat disturbance would result in the same primary impacts to mule deer as described above for wildlife in general. However, there could also be longer term helpful impacts to mule deer populations. The removal of piñon/juniper vegetation, followed by subsequent reclamation to an herbaceous-shrub community would provide habitat similar to that which has been created by NDOW and BLM through woodland chainings. These openings in the woodland that provide forage may contribute to the long-term benefit of mule deer.

Raptors would not be directly impacted by the Proposed Action. Indirect impacts could occur through potential reductions in local prey populations such as rabbits, due to an increase in open areas. Ferruginous Hawk nesting areas are located south of the project area along the tree line at the edge of the open valleys. None are known within the Alligator Ridge Plan of Operations.

The disturbance of vegetation, especially the woodlands, represents an indirect impact to bats. The woodlands provide foraging habitat for bats, as well as some roosting habitat. Due to the amount of available habitat, this impact is anticipated to be minimal.

The Project Area has the potential to provide nesting habitat for migratory birds. To avoid potential impacts, BMM would not conduct land clearing during the avian breeding season (April 15 through July 15, annually), except under the direction of a qualified biologist. If active nests are located, or if other evidence of nesting is observed, a protective buffer around these nests would be delineated, and the area would be avoided to prevent destruction or disturbance of nests until the birds are no longer present. Implementation of such conditions would reduce potential impacts to species protected under the Migratory Bird Treaty Act.

The level of human activity associated with the exploration project would be similar to dispersed recreation (i.e., hiking, camping, hunting, snowmobiling, off road ATV riding) by being limited in duration and localized. The increased noise level from the drill rig may interfere with territorial defense by birds with territories near the drill pad. Some species would be displaced during the time that the drilling occurs or until the vegetation has re-established. This could lead to direct mortality if the displaced individuals move into new habitats that already are occupied, creating intra-specific competition, or the displaced individuals would be vulnerable to predators until they become familiar with the new habitat. Due to the dispersed nature of the disturbance and the limited acreage involved at any one time or location, displacement is not likely to occur for most species.

The introduction of temporary drill pads and access roads has potential to cause habitat fragmentation. Due to the size of the Project Area and the disbursed nature of the disturbance, habitat fragmentation is not likely to affect migration, foraging, or other habitats for wildlife species known to occur in the project area.

No Action Alternative

Under the No Action Alternative there would be no further disturbance to wildlife and wildlife habitat. For mule deer there would also be no further expansion of grasses, forbs, and shrubs that might enhance their habitat and provide more available forage. However, these effects could occur on a more intermittent basis in the future if small scale mining notices were approved after the Alligator Ridge mine was fully closed and released.

4.15 Wild Horses

Proposed Action

There would be a short term loss of 4 acres of forage and habitat as a result of the proposed action. Following reclamation, the reclaimed surfaces are likely to provide more available forage than is currently available in the woodland areas. Sumps would be temporarily fenced and flagged as necessary in areas where wild horses are present to prevent access. Fences would be removed after drilling is completed. No fencing is planned for the reclaimed areas. The proposed action may disturb or displace resident horses, if any, in the immediate area of drilling activity. However, past experience has shown

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that horses are usually minimally displaced and/or disturbed. Some individuals and herds may watch the proceedings from nearby hills as a point of interest.

No Action Alternative

Under the No Action Alternative there would be no further change to the habitat. Any risks associated with fencing and disturbance would not occur. The potential benefit of increasing available forage would also not occur. However, these effects could occur on a more intermittent basis in the future if small scale mining notices were approved after the Alligator Ridge mine was fully closed and released.

4.16 Cumulative Impacts

4.16.1 Introduction

There is an excellent cumulative impact analysis that is applicable for the Proposed Action within the cumulative impact section of the *Bald Mountain Mine Expansion Project Final Environmental Impact Statement* (FEIS, 1995). Appendix B, pages B-1 through B-129. This cumulative impact assessment was written with the intent of using the information for future NEPA analyses. An area of approximately 366,000 acres was analyzed. The FEIS cumulative impact assessment considers the types of impacts anticipated from the Proposed Action.

4.16.2 – Update on Past, Present, and Reasonably Foreseeable Future Actions

This EA is tiered to the 1995 Bald Mountain Mine EIS and incorporates this section by reference. Although this analysis is still applicable to the current Proposed Action, there are some updates that need to be added.

Since the EIS was written, some of the reasonably foreseeable actions have become present actions. The Bald Mountain Mine and Mooney Basin Mine are expanding again and a new EIS is being prepared for that action. The mine disturbance would roughly double in size from 4,160 to 7,968 acres. The two mines would be consolidated into one plan of operation called the North Operations Area. A new reasonably foreseeable action for the Bald Mountain Mine complex would be the South Operations Area with potential expansions for the Alligator Ridge and Alligator Ridge Mines. If this occurred there could be additional disturbance on top of the current proposed action that would be absorbed by the new disturbance rather than adding cumulatively.

Gold prices have risen dramatically since the 1995 Bald Mountain EIS. There is considerable exploration occurring within the cumulative impact assessment area, mostly by Barrick Gold U.S., Bald Mountain Mine. In 2004, a programmatic EA was written for exploration drilling throughout the very large Barrick Gold claim block. So far, about 50 acres of the projected 70 acres have been disturbed. As stated in the introduction, this EA is tiered to the 2004 Programmatic Exploration Plan as well. Figure 5 shows the project boundaries for the existing mine plans in the area.

The potential for wind energy exists within the cumulative effects area. Currently there are studies occurring for the Diamond Mountains, which are one mountain range to the west of the proposed action.

4.16.3 Additional Resources not addressed in the 1995 EIS cumulative impact analysis

The 1995 Bald Mountain EIS did not address noxious and non-native, invasive weeds and two special status species that have had more recent concern. These species are sage grouse and pygmy rabbits. This environmental assessment concluded that sage grouse and pygmy rabbits were not found within the project area and therefore would not be impacted by the proposed action. They would not experience a cumulative impact and will not be further addressed. Noxious and Non Native Invasive weeds remain as the only resource deficiency.

4.16.3.1 Noxious and Non Native Invasive weeds

Study area

The cumulative effects study area for Non Native and Invasive weeds uses the Bald Mountain Mine Exploration Plan boundary and is shown in Figure 5. This boundary was used because it encompasses the most active use in the region where noxious weed spread is likely to occur.

Past Actions

Past land uses in the project area include livestock grazing, recreation, minerals exploration, wildlife habitat and wild horse use. Exploration disturbance is generally reclaimed within one season unless there is further exploration projected or the disturbance is developed for mining. Wild land fires have occurred within the cumulative effects area over the years and have been a large contributor to disturbance resulting in weedy invasion. Revegetation efforts normally result in an increase of weedy, invasive species for several growing seasons and then a gradual return to native species. Cheatgrass increase has been a long term consequence of disturbance in many areas due to exploration activities, off road vehicle use by recreationists, and overgrazing by livestock and wild horses.

Present Actions

Ongoing land uses include mining, ranching, recreation, livestock grazing, wild horse and wildlife use, and minerals exploration. Currently there is an aggressive exploration program in place by Barrick Gold throughout the cumulative disturbance area. Much of this ongoing minerals exploration activity is located on existing disturbance, but there is also new disturbance.

Reasonably Foreseeable Actions

Land uses expected for reasonably foreseeable future actions include mining, recreation, livestock grazing, wild horse and wildlife use, energy development, and minerals exploration. In addition, there is always the potential for additional wildland fires. For mining exploration, the potential outcome of an exploration program would be additional mining developments. As stated in the introduction, an expansion of mining features within the Alligator Ridge and Alligator Ridge Mines is a reasonably foreseeable action. Additional continuing exploration is expected throughout the cumulative impact study area in the next several years. Current livestock grazing and ranching activities would also be expected to continue, subject to allotment management strategies by Barrick Gold U.S (the permittee holder of much of the area) and the Ely Field Office. The implementation of the new Ely Field Office RMP would provide management direction for future land use. Wild horse use would be kept within the herd management use numbers for the area through horse gathers as needed, and wildlife grazing mitigated through hunting permits. There may be potential for wind farms along the Diamond Mountains to the west, or the mountains surrounding the Bald Mountain Mine complex.

Cumulative Impacts

The Proposed Action would add incrementally to the existing disturbance; however, effects would generally be minimal and mitigated by reclamation. Any time there is new disturbance there is opportunity for weed introduction. Following minerals exploration programs, additional pits may be developed resulting in some disturbance that may not be reclaimed. All other disturbance would be reclaimed at the end of the exploration program or end of mine life. Barrick Gold U.S. is committed to a Noxious Weed Control program throughout their claim block, which incorporates much of the cumulative impact study area. Because of this commitment to an ongoing noxious weed control program, noxious weed control is likely to be improved by the proposed action as compared to having no further mining activity in the area. Invasive, non native weeds are likely to increase for the short term, but would decline over time eventually matching undisturbed areas provided that there are no further disturbances from all the other potential land uses. It is likely that long term invasion of cheatgrass would occur and continue to expand cumulatively in some areas due to mining activities as well as from grazing, recreational activities, and other ground disturbing activities such as wind farms and utility corridors.

No Action Impacts

No additional disturbance would be created as a result of the No Action Alternative so there would be less risk of cumulatively increasing non native weedy invaders. The risk of noxious weed invasion would likely be the same for the No Action Alternative due to the pre-existing commitment by Barrick Gold to control noxious and non-native, invasive weeds in the area. However, mine life might also be shortened under the No Action Alternative and therefore, the weed control program by Barrick Gold might also be shorter.

5.0 Proposed Mitigation Measures

Mitigation measures are included as part of the Proposed Action. No additional mitigation measures are proposed in response to anticipated impacts.

6.0 Suggested Monitoring

Appropriate monitoring is included as part of the Proposed Action. No additional monitoring is suggested.

7.0 Consultation and Coordination

The Proposed Action was discussed with the tribes during the consultation meeting on February 14, 2008 by BLM Native American coordinator Elvis Wall. No comments or concerns were brought forward. No comments were received during the 45 day comment period following the meeting.

A public notification letter was sent out on February 8, 2008 and notification was also posted on the Ely Field Office external web page during the months of November 2006 through January 2008. The public notification invited comments and involvement in the EA. No comments or requests for involvement were received. The Final EA and DR/Fonsi are posted on the external Ely Field Office Website.

Internal District Review

Bureau of Land Management, Ely Field Office

Ben Noyes – Wild Horses

Bonnie Waggoner – Noxious and non-native, invasive weeds

Brenda Linnell – Lands

Kari Harrison – Soil, Water, Air

Mark Lowrie – Livestock Grazing

Marian Lichtler – Wildlife Specialist

Jake Rajala – NEPA Coordinator

Shawn Gibson – Cultural, Paleontological, and Historical Resources

Elvis Wall – Native American Consultation

Chris Hanefeld – Public Relations

Kalem Lenard – Recreation and Visual Resources

Other Reviewers

The following persons, groups, and agencies were contacted during the preparation of this document.

Bald Mountain Mine

Matt Zietlow – BMM Environmental Manager

Nevada Department of Wildlife

Rory Lamp

Nevada Division of Environmental Protection

Todd Seussmith

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APPENDIX A

Best Management Practices

**Best Management Practices for
For Mining Exploration in the Ely District**

General and Administrative

1. Any change or amendment to your minerals operation must be brought to the attention of the Ely Field Office Manager or an authorized officer prior to implementation of the change on the ground.
2. All survey monuments, claim markers, witness corners, reference monuments, bearing trees, etc., must be protected against destruction, obliteration or damage. When operations are concluded, the operator will remove all survey markers, stakes, flagging, etc., for which the operator has no further need.
3. Removal or alteration of existing improvements (fences, cattle guards, etc.) is not allowed without prior approval of the Authorized Officer. Existing improvements will be maintained in a serviceable and safe condition. Upon completion of operations, any authorized facility alterations will be restored to the specifications of the authorized officer.
4. No blasting will be permitted if it will be detrimental to the significant characteristics of archeological or historical values, recreation areas, known caves, water wells, or springs.
5. All trash, garbage, debris, and foreign matter must be removed and properly disposed. Site must be maintained and left in a clean and safe condition. Burning will not be allowed at the site.

Cultural Resources

6. Cultural resource inventories will be conducted on all proposed areas of potential surface disturbing impacts, including appropriate buffer zones, prior to authorization of the mineral operations. Inventories will be completed by BLM or BLM-approved cultural resource permit holders.
7. All decisions issued by the Ely Field Office will have a Needs Assessment completed in accordance with the Nevada BLM and SHPO Protocol.
8. Documentation (photos, drawings, etc.) will be collected on all sites eligible for the National Register of Historic Places. This will allow tracking of human and natural caused deterioration.
9. If cultural resources (historic or archaeological materials) are discovered during construction, the operator is to immediately stop work protect such materials, and contact the Authorized Officer. Within five working days, the Authorized Officer will inform the operator as to:

- a. The appropriate treatment measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not feasible);
 - b. A timeframe for the Authorized Officer to complete an expedited review and necessary consultation;
 - c. The operator's responsibility for treatment costs; and
 - d. Technical and procedural guidelines for the conduct of the treatment. Upon verification from the Authorized Officer that the required treatment has been completed, the operator will then be allowed to resume construction.
10. All identified cultural resources will be avoided by project-related activities per the Nevada BLM standards for cultural resources. If avoidance is not feasible, mineral activities must cease until mitigating measures or treatments are developed and implemented and Section 106 consultation is completed. Archaeological monitors may be required in special cases.
11. The operator is responsible for informing all persons associated with the project that knowingly disturbing cultural resources (historic or archaeological) or collecting artifacts is illegal.
12. During winter operations, requirements for cultural resource inventories may be waived by the Authorized Officer if the unsurveyed areas are located on bare and frozen ground or are completely covered (100%) by snow and the snow is sufficiently deep (approximately 4 to 6 inches) to prevent ground disturbing ruts. Should conditions change while operations are in progress, additional considerations may be necessary. The operator must contact the authorized officer to determine if an archaeological monitor or an inventory may be required prior to continuance of mineral activities.
13. Any activity planned within the viewshed of the Pony Express National Historic Trail or other National Landscape Conservation System (NLCS) properties, listed National Register Districts, or properties eligible under criterion A, must undergo a visual assessment. Appropriate mitigation of visual impacts will be implemented as necessary to keep the setting of the management corridor in as natural a condition as possible. Special reclamation measures may be required to restore the setting to its natural condition.

14. A noxious weed survey will be completed prior to any earth disturbing activity including cross-country travel. Noxious or invasive weeds that may be located on the site will be managed according to methods to be approved by the Authorized Officer. Should chemical methods be approved, the lessee must submit a Pesticide Use Proposal to the Authorized Officer 60 days prior to the planned application date. A Pesticide Application Report must be submitted to the Authorized Officer by the end of each fiscal year following chemical application.
15. To eliminate the transport of vehicle-borne weed seeds, roots, or rhizomes, all vehicles and heavy equipment used for the completion, maintenance, inspection, or monitoring of ground disturbing activities; for emergency fire suppression; or for authorized off-road driving will be free of soil and debris capable of transporting weed propagules. All such vehicles and equipment will be cleaned with power or high pressure equipment prior to entering or leaving the work site or project area. Vehicles used for emergency fire suppression will be cleaned as a part of check-in and demobilization procedures. Cleaning efforts will concentrate on tracks, feet or tires, and on the undercarriage. Special emphasis will be applied to axles, frames, cross members, motor mounts, on and underneath steps, running boards, and front bumper/brush guard assemblies. Vehicle cabs will be swept out and refuse will be disposed of in waste receptacles. Cleaning sites will be recorded using GPS or other mutually acceptable equipment and provided to the BLM Weed Coordinator or designated contact person.
16. Prior to the entry of vehicles and equipment to a project area, areas of concern will be identified and flagged in the field by a weed scientist or qualified biologist. The flagging will alert personnel or participants to avoid areas of concern.
17. Prior to entering public lands, the Contractor, Operator, or permit holder will provide information and training regarding noxious weed management and identification to all personnel who will be affiliated with the implementation and maintenance phases of the project. The importance of preventing the spread of weeds to uninfested areas and the importance of controlling existing populations of weeds will be explained.
18. To eliminate the transport of soil-borne noxious weed seeds, roots, or rhizomes, infested soils or materials will not be moved and redistributed on weed-free or relatively weed-free areas. In areas where infestations are identified or noted and infested soils, rock, or overburden must be moved, these materials will be salvaged and stockpiled adjacent to the area from which they were stripped. Appropriate measures will be taken to minimize wind and water erosion of these stockpiles. During reclamation, the materials will be returned to the area from which they were stripped.
19. Prior to project approval, a site specific weed survey will occur and a Weed Risk Assessment will be completed. Monitoring will be conducted for a period no shorter than the life of the permit or until bond release and monitoring reports will be provided to the BLM. If the spread of noxious weeds is noted, appropriate weed control procedures will be determined in consultation with BLM personnel and will be in compliance with the appropriate BLM Handbook sections and applicable laws and regulations. All weed control efforts on BLM lands will be in compliance with BLM Handbook H-9011, H-9011-1 Chemical Pest Control, H-9014 Use of Biological Control Agents of Pests on Public

Lands, and H-9015 Integrated Pest Management. Submission of Pesticide Use Proposals (PUPs) and Pesticide Application Records (PARs) will be required.

20. All vehicles and heavy equipment used for the completion, maintenance, inspection, or monitoring of ground disturbing activities; for emergency fire suppression; or for authorized off-road driving that are used to drive through, mow, harvest, scrape, or otherwise contact plant species listed on the Nevada Noxious Weed list or specifically identified by the Ely Field Office will be cleaned prior to continued use in weed free areas. Cleaning requirements are described in SOP# 1.2.5.4.
21. For mineral activity, retain bonds for weed control until the site is returned to desired vegetative conditions.
22. In areas of known noxious weed infestations, monitoring of noxious weeds will be conducted on an annual basis. Monitoring will be conducted until project release. If the spread of noxious weeds is noted, the infested areas will be further evaluated to determine the appropriate remedial action and appropriate treatment. Appropriate weed control procedures, including target species, timing of control, and method of control, will be determined in consultation with BLM personnel.
23. No noxious weeds will be allowed on the site for reclamation release. Any noxious weeds that become established will be controlled.

Soils and Vegetation

24. Existing access must be used whenever possible. Off-road vehicular travel shall be held to an absolute minimum necessary to complete operations. Additional roads, if needed, will be kept to an absolute minimum and the location of routes must be approved by the Authorized Officer prior to construction.
25. All vegetative clearing will be held to the minimum necessary to accommodate the planned operation.
26. During periods of adverse conditions affecting soil moisture caused by climatic factors such as thawing, heavy rains, snow, flooding, or drought, all activities off existing maintained roads that create excessive surface rutting may be suspended. When adverse conditions exist, the operator will contact the Authorized Officer for an evaluation and decision based on soil types, soil moisture, slope, vegetation, and cover.
27. Lands containing unstable/highly erodible soils may require additional protective measures such as restrictions on surface entry during periods of excessive runoff, avoidance of selected areas, and special reclamation techniques.

Hazardous Materials

28. No oil or lubricants will be drained onto the ground surface. Any spills under 25 gallons will be immediately cleaned up; spills over 25 gallons will be reported to the Authorized Officer and NDEP.

29. All construction, operation, and maintenance activities will comply with all applicable Federal, State, and local laws and regulations regarding the use of hazardous substances and the protection of air and water quality.
30. The operator will work with the Authorized Officer on the containment of drilling fluids and drill hole cuttings. Mud, separation pits, and other containments used for the storage of any hazardous materials will be adequately fenced, posted, and/or covered
31. Powder magazines will be located at least 0.25-mile from traveled roads. Loaded shot holes and charges will be attended at all times. Use of explosives will be according to applicable Federal and State regulations.

Fire

32. The operator will make every effort to prevent, control, or suppress any fire in the operating area. The operator may be required to have fire-fighting equipment available on-site while operations are in progress, depending on hazards inherent in the type of operation and fire hazard levels. Reports of uncontrolled fires will be relayed immediately to the Ely Field Office Manager or Authorized Officer. The BLM Fire Dispatch telephone number is (775) 289-1925 or 1-800-633-6092. After working hours call 911 or the White Pine County Sheriff's office at (775) 289-8801, the Lincoln County Sheriff's Office at (775) 962-5151, or the Nye county Sheriff's Office at (775) 482-8101

Wildlife and Livestock

33. Under no circumstances will wild horses, burros, wildlife, or livestock be willfully harassed. When traveling roads, all livestock gates will be closed after use.
34. To protect wildlife and wild horses, perimeter fences will be flagged every 16 feet with white flagging. The flagging should be at least one inch wide and with at least twelve inches hanging free from the top wire of the fence. Fences will also avoid obvious horse migration routes (deep trails, stud piles) if at all possible.
35. If the project involves heavy or sustained traffic, road signs for safety and protection of wild horses and wildlife will be required.
36. Any new disturbance commencing between April 15 and July 15 must first be surveyed for nesting migratory birds. If nests are found, the project may be moved or delayed until July 15.
37. Any identified bald eagle roost sites, peregrine falcon hack sites, and occupied raptor aeries (nests) will be avoided during mineral operations. A 0.5-mile buffer zone will be imposed on all activities around occupied nests.
38. Actions which will adversely impact a special status species (including federally listed, proposed, and candidate species, state protected species, and BLM sensitive species or its habitat, will be modified

in order to prevent possible future listing of these species as threatened or endangered. The following restrictions apply to the following species:

- a. Sage Grouse. No surface disturbance will be allowed within an active sage grouse lek. No surface use will be allowed within ½ mile of an active sage grouse lek from midnight until 10 a.m. during the period March 15 through May 31.
- b. Ferruginous Hawk. Ferruginous Hawk nest sites will not be disturbed. No surface use will be allowed within ½ mile of an occupied Ferruginous Hawk nest during the period March 1 through June 30 or until the birds have fledged (left) the nest.
- c. Mule Deer Habitat SOP

Within the Ely District, there are identified mule deer key habitats. (Key Habitats include habitats such as crucial habitats. These habitats are essential to populations of big game. If elements of these habitats are compromised, the results could be detrimental to the population.) Therefore, prior to entry onto the land, the operator will discuss the proposed activity with the appropriate Bureau of Land Management's authorized officer. Additional measures may be required for the protection of the deer and their habitat which may include:

- i. Limitation on surface use during the period of crucial deer use.
 - ii. Minimizing disturbance to habitat and forage.
- d. Pygmy Rabbit SOP - Within the Ely District, there are favorable habitats selected by pygmy rabbits as borrowing areas. Therefore, prior to entry into these areas the operator will discuss the proposed activities with the Bureau of Land Managements authorized officer who may require additional measures for the protection of pygmy rabbits and their habitats. Such measures may include:.
 - i. Avoidance of selected areas
 - ii. Restriction of activities near burrows during the months of April through June.

Reclamation

- 39. To provide for effective rehabilitation of the disturbed area, all available growth medium, as practical, will be removed and stockpiled. Any trees removed will be separated from soils and stockpiled separately.

40. Topsoil stockpiles and road berms, if scheduled to be left in place over the growing season, will be seeded with an approved site-specific interim seed mix to reduce erosion, preserve the biological flora and fauna, and prevent the establishment of noxious weeds and other undesirable plant species.
41. The operator shall reclaim the disturbed area concurrently or at the earliest feasible time by recontouring to conform with pre-existing topography (including filling of trenches), to the extent possible, followed by redistribution of stockpiled topsoil over the reclaimed area. Compacted areas will be ripped to a depth of 12 inches unless in solid rock. Ripped areas may need further work to break up large clods and produce a fine-grained seed bed.
42. Site preparation for reclamation may include contour furrowing, terracing, reduction of steep cut and fill slopes, and the installation of water bars, etc.
43. Reseeding may be required, in which case a site-specific seed mixture will be recommended by the operator and approved by the Authorized Officer. Seeding is recommended only between October 1 and March 15 for the northern part of the District, and November 1 through March 1 for the southern part of the District.
44. Reclamation will normally be accomplished with native seeds only. These will be representative of the indigenous species present in the adjacent habitat. Rationale for potential seeding with selected non-natives must be documented. Possible exceptions could include use of non-natives for a temporary cover crop to out-complete weeds. Where large acreages are burned by the fires and seeding is required for erosion control, all native species can be cost prohibitive and/or unavailable. In all cases, seed mixes will be approved by the Authorized Officer prior to planting.
45. All interim and final seed mixes, hay, straw, and hay/straw products must be tested for noxious weeds and certified free of plant species listed on the Nevada Noxious Weed list.
46. All drill holes must be plugged per Nevada State statute (Division of Water Resources "Regulations for Water Well and Related Drilling") as warranted. If artesian flow is encountered, the drill hole must be plugged immediately. The location, depth, and relative flow rate of any water intercepted shall be reported to the Ely Field Office Manager or the Authorized Officer. Drill cuttings will be returned to the hole if possible, or at a minimum, raked and spread out so as not to impede regrowth of vegetation or to create erosion problems.
47. The Ely Field Office Manager or the Authorized Officer will be notified within 5 days of completion of reclamation work so that timely compliance inspections can be completed.
48. The area is considered to be satisfactorily reclaimed when all disturbed areas have been recontoured to blend with the natural topography, erosion has been stabilized, and an acceptable vegetative cover has been established. The Nevada Guidelines for Successful Revegetation for the Nevada Division of Environmental Protection, the Bureau of Land Management, and the U.S.D.A

Forest Service (or most current revision or replacement of this document) will be used to determine if revegetation is successful.

APPENDIX B

Recommended Seed Mix

Recommended Seed Mix For Alligator Ridge Mine

Species	Seeds/Lb	Seed rate	Seeds/sq ft. lbs/ac
Pseudoroegneria spicata spp. Spicata (Bluebunch wheatgrass)	140,000	3.0	10
Elymus lanceolatus spp. dasystachyum (Thickspike wheatgrass)	154,000	3	10
Agropyron smithii (Western wheatgrass)	110,000	3.0	7
Poa canbyi (Canby bluegrass)	926,000	0.5	10
Oryzopsis hymenoides (Indian ricegrass)	141,000	2.0	6
Elymus cinerus (Magnar Great Basin Wildrye)	95,000	1.0	2
Atriplex canescens (Four wing saltbush)	52,000	2.0	2
Purshia tridentata (Antelope bitterbrush)	15,000	1.0	0.3
Artemisia nova (Black sagebrush)	907,200	0.05	variable
Linum lewisii (Appar Blue Flax)	293,000	0.5	3
Penstemon palmeri (Palmer penstemon)	610,000	0.1	1
Sanguisorba minor (Delar Small Burnett)	<u>55,000</u>	<u>1.0</u>	<u>1</u>
Total		17.15 lbs/ac	52 seeds/sq ft.

APPENDIX C

NOXIOUS WEED RISK ASSESSMENT

RISK ASSESSMENT FOR NOXIOUS & INVASIVE WEEDS

Alligator Ridge Exploration Project

White Pine County, Nevada

On April 7th, 2008 a Noxious & Invasive Weed Risk Assessment was completed for the Barrick Bald Mountain Mine – Vantage Exploration project in White Pine County, NV. The proposed action is for 18 drill sites within the plan boundary using a track rig. There would be 1.7 miles of new and reopened road to access these sites. Drill site disturbance would total 0.8 acres, and drill road disturbance would total 3.2 acres for a total proposed disturbance of about 4 acres. General drilling operations and reclamation would follow the same procedures as outlined in the Bald Mountain Exploration Plan and analyzed in the 2004 Programmatic EA.

No field surveys were completed for this project. Instead, the Ely District weed inventory data was consulted. The following non-native species are found in and around the project area:

<i>Acroptilon repens</i>	Russian knapweed
<i>Carduus nutans</i>	Musk thistle
<i>Centaurea stoebe</i>	Spotted knapweed
<i>Cirsium arvense</i>	Canada thistle
<i>Cirsium vulgare</i>	Bull thistle
<i>Hyoscyamus niger</i>	Black henbane
<i>Lepidium draba</i>	Hoary cress
<i>Lepidium latifolium</i>	Tall whitetop
<i>Onopordum acanthium</i>	Scotch thistle

Cheatgrass (*Bromus tectorum*), Russian thistle (*Salsola kali*), halogeton (*Halogeton glomerus*), and tumble mustard (*Sisymbrium altissimum*) more than likely occur along roads in the project area. This area was last inventoried by the BLM in 2002.

Factor 1 assesses the likelihood of noxious/invasive weed species spreading to the project area.

None (0)	Noxious weed species are not located within or adjacent to the project area. Project activity is not likely to result in the establishment of noxious weed species in the project area.
Low (1-3)	Noxious weed species are present in the areas adjacent to but not within the project area. Project activities can be implemented and prevent the spread of noxious weeds into the project area.
Moderate (4-7)	Noxious weed species located immediately adjacent to or within the project area. Project activities are likely to result in some areas becoming infested with noxious weed species even when preventative management actions are followed. Control measures are essential to prevent the spread of noxious weeds within the project area.
High (7-10)	Heavy infestations of noxious weeds are located within or immediately adjacent to the project

	area. Project activities, even with preventative management actions, are likely to result in the establishment and spread of noxious weeds on disturbed sites throughout much of the project area.
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For this project, the factor rates as Moderate (6) at the present time. Due to the amount of ground disturbance and heavy machinery use associated with this project, it is likely that the project activities will result in any new infestations to the area, especially of non-native, invasive weeds such as cheatgrass.

Factor 2 assesses the consequences of noxious weed establishment in the project area.

Low to Nonexistent (1-3)	None. No cumulative effects expected.
Moderate (4-7)	Possible adverse effects on site and possible expansion of infestation within the project area. Cumulative effects on native plant communities are likely but limited.
High (8-10)	Obvious adverse effects within the project area and probable expansion of noxious weed infestations to areas outside the project area. Adverse cumulative effects on native plant communities are probable.

This project rates as High (8) at the present time. The project area is currently considered to be mostly weed free so any new infestations would have adverse cumulative effects on the nearby native plant community. Also, any increase of cheatgrass could alter the fire regime in the area.

The Risk Rating is obtained by multiplying Factor 1 by Factor 2.

None (0)	Proceed as planned.
Low (1-10)	Proceed as planned. Initiate control treatment on noxious weed populations that get established in the area.
Moderate (11-49)	Develop preventative management measures for the proposed project to reduce the risk of introduction of spread of noxious weeds into the area. Preventative management measures should include modifying the project to include seeding the area to occupy disturbed sites with desirable species. Monitor the area for at least 3 consecutive years and provide for control of newly established populations of noxious weeds and follow-up treatment for previously treated infestations.
High (50-100)	Project must be modified to reduce risk level through preventative management measures, including seeding with desirable species to occupy disturbed site and controlling existing infestations of noxious weeds prior to project activity. Project must provide at least 5 consecutive years of monitoring. Projects must also provide for control of newly established populations of noxious weeds and follow-up treatment for previously treated infestations.

For this project, the Risk Rating is **Moderate (48)**. Based on this risk rating, preventative management measures are needed for this project. Preventative measures to help mitigate include the following Ely District BMPs:

- Monitoring will be conducted for a period no shorter than the life of the permit or until bond release and monitoring reports will be provided to the BLM. If the spread of noxious weeds is noted, appropriated weed control procedures will be determined in consultation with BLM personnel and will be in compliance with the appropriate BLM handbook sections and applicable laws and regulations.

All weed control efforts on BLM-administered lands will be in compliance with BLM Handbook H-9011, H-9011-1 Chemical Pest Control, H-9014 Use of Biological Control Agents of Pests on Public Lands, and H-9015 Integrated Pest Management. Should chemical methods be approved, the lessee must submit a Pesticide Use Proposal to the Authorized Officer 60 days prior to the planned application date. A pesticide Application Report must be submitted to the Authorized Officer by the end of the fiscal year following chemical application.

- Prior to the entry of vehicles and equipment to a project area, areas of concern will be identified and flagged in the field by a weed scientist or qualified biologist. The flagging will alert personnel or participants to avoid areas of concern. These sites will be recorded using global positioning systems or other Ely Field Office approved equipment and provided to the Field Office Weed Coordinator or designated contact person.
- Prior to entering public lands, the contractor, operator, or permit holder will provide information and training regarding noxious weed management and identification to all personnel who will be affiliated with the implementation and maintenance phases of the project. The importance of preventing the spread of weeds to uninfested areas and importance of controlling existing populations of weeds will be explained.
- To eliminate the transport of vehicle-borne weed seeds, roots, or rhizomes all vehicles and heavy equipment used for the completion, maintenance, inspection, or monitoring of ground disturbing activities or for authorized off-road driving will be free of soil and debris capable of transporting weed propagules. All such vehicles and equipment will be cleaned with power or high pressure equipment prior to entering or leaving the work site or project area. Cleaning efforts will concentrate on tracks, feet and tires, and on the undercarriage. Special emphasis will be applied to axels, frames, cross members, motor mounts, on and underneath steps, running boards, and front bumper/brush guard assemblies. Vehicle cabs will be swept out and refuse will be disposed of in waste receptacles. Cleaning sites will be recorded using global positioning systems or other mutually acceptable equipment and provided to the Field Office Weed Coordinator or designated contact person.
- To eliminate the introduction of noxious weed seeds, roots, or rhizomes all interim and final seed mixes, hay, straw, hay/straw, or other organic products used for reclamation or stabilization activities, feed, bedding will be certified free of plant species listed on the Nevada noxious weed list or specifically identified by the BLM Ely Field Office.
- To eliminate the introduction of noxious weed seeds, roots, or rhizomes all source sites such as borrow pits, fill sources, or gravel pits used to supply inorganic materials used for construction, maintenance, or reclamation will be inspected and found to be free of plant species listed on the Nevada noxious weed list or specifically identified by the BLM Ely Field Office. Inspections will be conducted by a weed scientist or qualified biologist.
- Removal and disturbance of vegetation would be kept to a minimum through construction site management (e.g. using previously disturbed areas and existing easements, limiting equipment/materials storage and staging area sites, etc.)
- Reclamation would normally be accomplished with native seeds only. These would be representative of the indigenous species present in the adjacent habitat. Rationale for potential seeding with selected nonnative species would be documented. Possible exceptions would include use of non-native species for a temporary cover crop to out-compete weeds. Where large acreages are burned by fires and seeding is required for erosion control, all native species could be cost prohibitive and/or

unavailable. In all cases, seed mixes would be approved by the BLM Authorized Officer prior to planting.

- Mixing of herbicides and rinsing of herbicide containers and spray equipment would be conducted only in areas that are safe distance from environmentally sensitive areas and points of entry to bodies of water (storm drains, irrigation ditches, streams, lakes, or wells).
- Methods used to accomplish weed control objectives would consider seasonal distribution of large wildlife species.
- No noxious weeds will be allowed on the site at the time of reclamation release. Any noxious weeds that become established will be controlled.

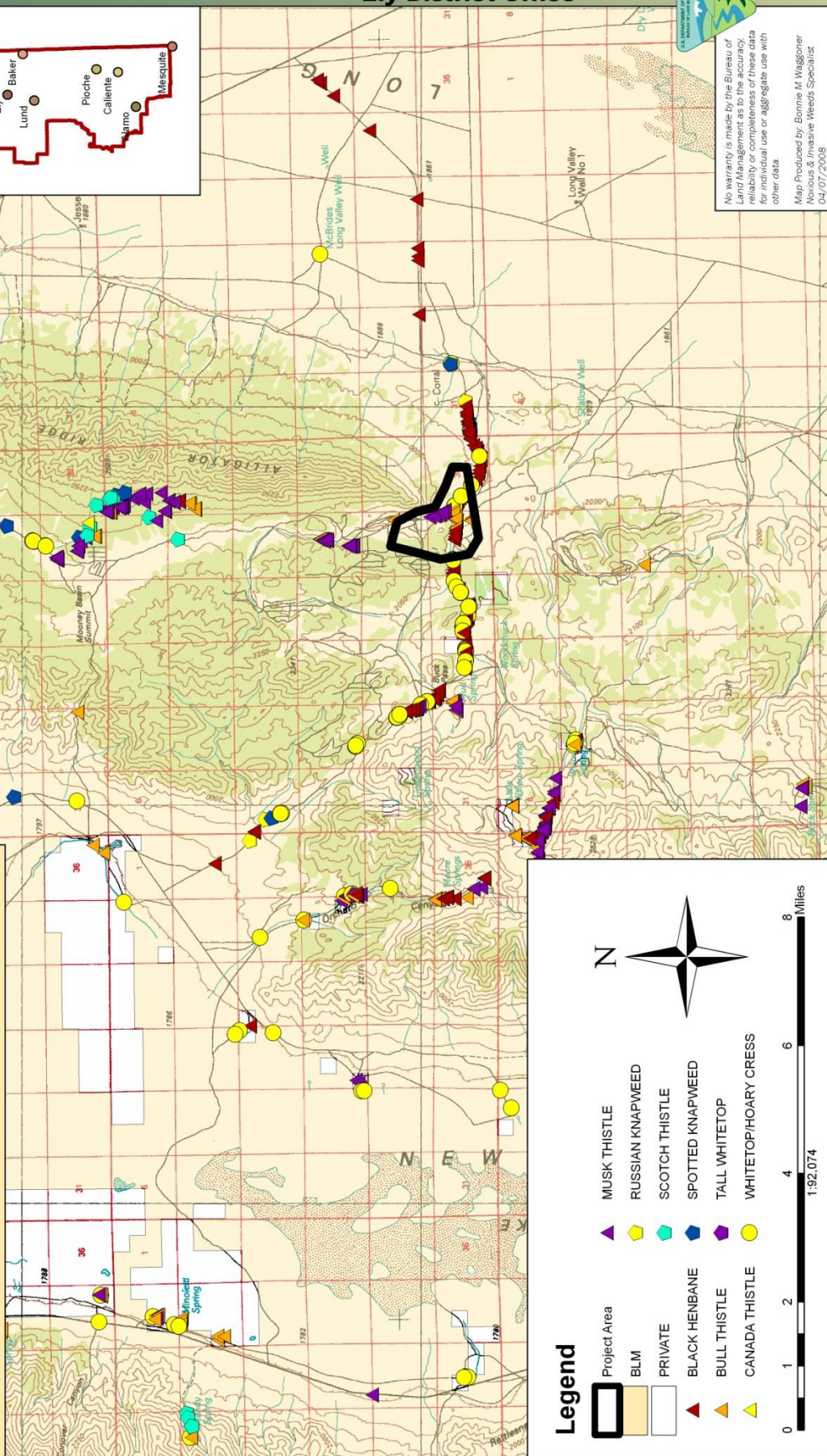
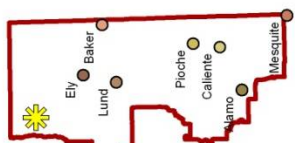
Reviewed by:

Bonnie Waggoner

Date

Ely District Noxious & Invasive Weed Coordinator

Location within the
Ely Field Office boundary



No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual use or aggregate use with other data.

Map Produced by: Bonnie M Waggoner
Noxious & Invasive Weeds Specialist
04/07/2008

APPENDIX D

Wildlife Species List - South Ruby Allotment

Nevada Division of Wildlife (Eastern Region)

Wildlife Species List - South Ruby Allotment (Unit 104)

Birds

Order: Podicipediformes

Family: Podicipedidae (Grebes)

Pied-billed Grebe *Podilymbus podiceps*

Order: Ciconiiformes

Family: Ardeidae (Bitterns, Herons, Egrets)

Great Blue Heron *Ardea herodias*

Family: Threskiornithidae (Ibises)

White-faced Ibis *Plegadis chihi*

Family: Cathartidae (New World Vultures)

Turkey Vulture *Cathartes aura*

Order: Anseriformes

Family: Anatidae (Ducks, Geese, Swans)

Greater White-fronted Goose *Anser albifrons*

Snow Goose *Chen caerulescens*

Canada Goose *Branta canadensis*

Trumpeter Swan *Cygnus buccinator*

Tundra Swan *Cygnus columbianus*

Wood Duck *Aix sponsa*

Gadwall *Anus strepera*

American Widgeon *Anus americana*

Mallard *Anus platyrhynchos*

Cinnamon Teal *Anus cyanoptera*

Blue-winged Teal *Anus discors*

Northern Shoveler *Anus clypeata*

Northern Pintail *Anus acuta*

Green-winged Teal *Anus crecca*

Canvasback *Aythya valisineria*

Redhead *Aythya americana*

Ring-necked Duck *Aythya collaris*

Lesser Scaup *Aythya affinis*

Bufflehead *Bucephala albeola*

Common Goldeneye *Bucephala clangula*

Barrow's Goldeneye *Bucephala islandica*

Hooded Merganser *Lophodytes cucullatus*

Common Merganser *Mergus merganser*

Red-breasted Merganser *Mergus serrator*

Ruddy Duck *Oxyura jamaicensis*

Order: Falconiformes

Family: Accipitridae (Hawks, Eagles, Osprey)

Bald Eagle	<i>Haliaeetus leucocephalus</i>
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Northern Harrier	<i>Circus cyaneus</i>
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Swainson's Hawk	<i>Buteo swainsoni</i>
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Red-tailed Hawk	<i>Buteo jamaicensis</i>
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Ferruginous Hawk	<i>Buteo regalis</i>
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Rough-legged Hawk	<i>Buteo lagopus</i>
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Golden Eagle	<i>Aquila chrysaetos</i>
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Family: Falconidae (Falcons)

American Kestrel	<i>Falco sparverius</i>
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Merlin	<i>Falco columbarius</i>
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American Peregrine Falcon	<i>Falco peregrinus</i>
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Prairie Falcon	<i>Falco mexicanus</i>
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Order: Galliformes

Family: Phasianidae (Grouse, Partridge)

Chukar	<i>Alectoris chukar</i>
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Gray Partridge	<i>Perdix perdix</i>
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Sage Grouse	<i>Centrocercus urophasianus</i>
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Order: Gruiformes

Family: Rallidae (Rails, Coots)

Sora	<i>Porzana carolina</i>
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American Coot	<i>Fulica americana</i>
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Family: Gruidae (Cranes)

Greater Sandhill Crane	<i>Grus canadensis tabida</i>
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Order: Charadriiformes

Family: Charadriidae (Plovers)

Snowy Plover	<i>Charadrius alexandrinus</i>
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Killdeer	<i>Charadrius vociferus</i>
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Family: Recurvirostridae (Avocets)

Black-necked Stilt	<i>Himantopus mexicanus</i>
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American Avocet	<i>Recurvirostra americana</i>
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Family: Scolopacidae (Sandpipers, Phalaropes)

Greater Yellowlegs	<i>Tringa melanoleuca</i>
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Lesser Yellowlegs	<i>Tringa flavipes</i>
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Willet	<i>Catoptrophorus semipalmatus</i>
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Long-billed Curlew	<i>Numenius americanus</i>
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Western Sandpiper	<i>Calidris mauri</i>
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Least Sandpiper	<i>Calidris minutilla</i>
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Common Snipe	<i>Gallinago gallinago</i>
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Family: Laridae (Gulls, Terns)

Franklin's Gull	<i>Larus pipixcan</i>
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Ring-billed Gull	<i>Larus delawarensis</i>
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California Gull	<i>Larus californicus</i>
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Caspian Tern	<i>Sterna caspia</i>
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Forster's Tern	<i>Sterna forsteri</i>
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Order: Columbiformes

Family: Columbidae (Doves)

Rock Dove	<i>Columba livia</i>
Mourning Dove	<i>Zenaida macroura</i>

Red-naped Sapsucker	<i>Sphyrapicus nuchalis</i>
Downy Woodpecker	<i>Picoides pubescens</i>
Hairy Woodpecker	<i>Picoides villosus</i>
Northern Flicker	<i>Colaptes auratus</i>

Order: Strigiformes

Family: Tytonidae (Barn Owls)

Barn Owl	<i>Tyto alba</i>
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Family: Strigidae (Owls)

Western Screech-Owl	<i>Otus kennicottii</i>
Great Horned Owl	<i>Bubo virginianus</i>
Burrowing Owl	<i>Athene cunicularia</i>
Short-eared Owl	<i>Asio flammeus</i>
Northern Saw-whet Owl	<i>Aegolius acadicus</i>

Order: Caprimulgiformes

Family: Caprimulgidae (Goatsuckers)

Common Nighthawk	<i>Chordeiles minor</i>
Common Poorwill	<i>Phalaenoptilus nuttallii</i>

Order: Apodiformes

Family: Trochilidae (Hummingbirds)

Black-chinned Hummingbird	<i>Archilochus alexandri</i>
Calliope Hummingbird	<i>Stellula calliope</i>
Broad-tailed Hummingbird	<i>Selasphorus platycercus</i>
Rufous Hummingbird	<i>Selasphorus rufus</i>

Order: Piciformes

Family: Picidae (Woodpeckers)

Order: Passeriformes

Family: Tyrannidae (Flycatchers)

Western Wood-Pewee	<i>Contopus sordidulus</i>
Willow Flycatcher	<i>Epidonax traillii</i>
Gray Flycatcher	<i>Epidonax wrightii</i>
Say's Phoebe	<i>Sayornis saya</i>
Ash-throated Flycatcher	<i>Myiarchus cinerascens</i>
Western Kingbird	<i>Tyrannus verticalis</i>

Family: Laniidae (Shrikes)

Loggerhead Shrike	<i>Lanius ludovicianus</i>
Northern Shrike	<i>Lanius excubitor</i>

Family: Corvidae (Jays)

Western Scrub-Jay	<i>Aphelocoma californica</i>
Pinyon Jay	<i>Gymnorhinus cyanocephalus</i>
Black-billed Magpie	<i>Pica pica</i>
American Crow	<i>Corvus brachyrhynchos</i>
Common Raven	<i>Corvus corax</i>

Family: Aluididae (Larks)

Horned Lark	<i>Eremophila alpestris</i>
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Family: Hirundinidae (Swallows)

Tree Swallow	<i>Tachycineta bicolor</i>
Violet-green Swallow	<i>Tachycineta thalassina</i>
N. Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>
Barn Swallow	<i>Hirundo rustica</i>

Family: Paridae (Chickadees, Titmice)

Mountain Chickadee	<i>Poecile gambeli</i>
Juniper Titmouse	<i>Baeolophus griseus</i>

Family: Aegithalidae (Bushtit)

Bushtit	<i>Psaltirparus minimus</i>
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Family: Troglodytidae (Wrens)

Rock Wren	<i>Salpinctes obsoletus</i>
Canyon Wren	<i>Catherpes mexicanus</i>
Marsh Wren	<i>Cistothorus palustris</i>

Family: Regulidae (Kinglets)

Golden-crowned Kinglet	<i>Regulus satrapa</i>
Ruby-crowned Kinglet	<i>Redulus calendula</i>

Family: Sylviidae (Gnatcatchers)

Blue-gray Gnatcatcher	<i>Polioptila caerulea</i>
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Family: Turnidae (Thrushes)

Mountain Bluebird	<i>Sialia currucoides</i>
Townsend's Solitaire	<i>Myadestes townsendi</i>
American Robin	<i>Turdus migratorius</i>

Family: Mimidae (Thrashers, Mockingbirds)

Northern Mockingbird	<i>Mimus polyglottos</i>
Sage Thrasher	<i>Oreoscoptes montanus</i>

Family: Sturnidae (Starlings)

European Starling	<i>Sturnus vulgaris</i>
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Family: Motacillidae (Pipits)

American Pipit	<i>Anthus rubescens</i>
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Family: Parulidae (Warblers)

Yellow Warbler	<i>Dendroica petechia</i>
Yellow-rumped Warbler	<i>Dendroica coronata</i>
Black-throated Gray Warbler	<i>Dendroica nigrescens</i>
Common Yellowthroat	<i>Geothlypis trichas</i>

Family: Emberizidae (Sparrows, Towhees, Juncos)

Green-tailed Towhee	<i>Pipilo chlorurus</i>
Spotted Towhee	<i>Pipilo maculatus</i>
American Tree Sparrow	<i>Spizella arborea</i>
Chipping Sparrow	<i>Spizella passerina</i>
Brewer's Sparrow	<i>Spizella breweri</i>
Vesper Sparrow	<i>Pooecetes gramineus</i>

Family: Emberizidae (Sparrows, Towhees, Juncos)

(continued)

Lark Sparrow	<i>Chondestes grammacus</i>
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Black-throated Sparrow	<i>Amphispiza bilineata</i>
Sage Sparrow	<i>Amphispiza belli</i>
Savannah Sparrow	<i>Passerculus sandwichensis</i>
Fox Sparrow	<i>Passerella iliaca schistacea</i>
Song Sparrow	<i>Melospiza melodia</i>
Lincoln's Sparrow	<i>Melospiza lincolni</i>
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>
Dark-eyed Junco(Oregon)	<i>Junco hyemalis therburi</i>
Dark-eyed Junco(Gray-headed)	<i>Junco hyemalis caniceps</i>

Family: Cardinalidae (Grosbeaks, Buntings)

Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>
Lazuli Bunting	<i>Passerina amoena</i>

Family: Icteridae (Blackbirds, Orioles)

Red-winged Blackbird	<i>Agelaius phoeniceus</i>
Western Meadowlark	<i>Sturnella neglecta</i>
Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>
Great-tailed Grackle	<i>Quiscalus mexicanus</i>
Brown-headed Cowbird	<i>Molothrus ater</i>
Bullock's Oriole	<i>Icterus bullockii</i>
Scott's Oriole	<i>Icterus parisorum</i>

Family: Fringillidae (Finches, Grosbeaks)

Gray-crowned Rosy Finch	<i>Leucosticte tephrocotis</i>
Black Rosy Finch	<i>Leucosticte atrata</i>
Cassin's Finch	<i>Carpodacus cassinii</i>
House Finch	<i>Carpodacus mexicanus</i>

Family: Passeridae (Old World Sparrows)

House Sparrow	<i>Passer domesticus</i>
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Mammals

Order: Insectivora (Insect-Eaters)

Family: Soricidae (Shrews)

Merriam's Shrew	<i>Sorex meriammi</i>
Dusky Shrew	<i>Sorex monticolus</i>
Vagrant Shrew	<i>Sorex vagrans</i>
Water Shrew	<i>Sorex palustris</i>
Preble's Shrew	<i>Sorex preblei</i>

Order: Chiroptera (Bats)

Family: Vespertilionidae (Plainnose Bats)

California Myotis	<i>Myotis californicus</i>
Small-footed Myotis	<i>Myotis ciliolabrum</i>
Long-eared Myotis	<i>Myotis evotis</i>
Little Brown Bat	<i>Myotis lucifugus</i>
Long-legged Myotis	<i>Myotis volans</i>
Hoary Bat	<i>Lasiurus cinereus</i>
Silver-haired Bat	<i>Lasionycteris noctivagans</i>
Western Pipistrelle	<i>Pipistrellus hesperus</i>
Big Brown Bat	<i>Eptesicus fuscus</i>
Townsend's Big-eared Bat	<i>Corynorhinus townsendii</i>

Spotted Bat	<i>Euderma maculata</i>
Pallid Bat	<i>Antrozous pallidus</i>

Family: Molossidae (Freetail Bats)

Brazilian Free-tailed Bat	<i>Tadarida brasiliensis</i>
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Order: Lagomorpha (Hares, Pikas, Rabbits)

Family: Leporidae (Hares, Rabbits)

Pygmy Rabbit	<i>Brachylagus idahoensis</i>
Mountain Cottontail	<i>Sylvilagus nuttalli</i>
Black-tailed Jackrabbit	<i>Lepus californicus</i>

Order: Rodentia (Rodents)

Family: Sciuridae (Squirrels)

Least Chipmunk	<i>Tamias minimus</i>
Cliff Chipmunk	<i>Tamias dorsalis</i>
Whitetail Antelope Squirrel	<i>Ammospermophilus leucurus</i>
Townsend Ground Squirrel	<i>Spermophilus townsendii</i>
Belding Ground Squirrel	<i>Spermophilus beldingi</i>
Rock Squirrel	<i>Spermophilus variegatus</i>

Family: Geomyidae (Gophers)

Botta's Pocket Gopher	<i>Thomomys bottae</i>
Northern Pocket Gopher	<i>Thomomys talpoides</i>
Southern Pocket Gopher	<i>Thomomys umbrinus</i>

Family: Heteromyidae (Kangaroo Rodents)

Little Pocket Mouse	<i>Perognathus longimembris</i>
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Great Basin Pocket Mouse	<i>Perognathus parvus</i>
Dark Kangaroo Mouse	<i>Microdipodops megacephalus</i>
Ord Kangaroo Rat	<i>Dipodomys ordii</i>
Chisel-toothed Kangaroo Rat	<i>Dipodomys microps</i>

Family: Cricetidae (Mice, Rats, Voles)

Western Harvest Mouse	<i>Reithrodontomys megalotis</i>
Canyon Mouse	<i>Peromyscus crinitus</i>
Deer Mouse	<i>Peromyscus maniculatus</i>
Pinion Mouse	<i>Peromyscus truei</i>
Northern Grasshopper Mouse	<i>Onychomys leucogaster</i>
Desert Woodrat	<i>Neotoma lepida</i>
Mountain Vole	<i>Microtus montanus</i>
Long-tailed Vole	<i>Microtus longicaudus</i>
Sagebrush Vole	<i>Lemmiscus curtatus</i>
Muskrat	<i>Ondatra zibethica</i>

Family: Zapodidae (Jumping Mice)

Western Jumping Mouse	<i>Zapus princeps</i>
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Family: Erethizontidae (New World Porcupines)

Porcupine	<i>Erethizon dorsatum</i>
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Order: Carnivora (Flesh-Eaters)

Family: Canidae (Dogs, Wolves, Foxes)

Coyote	<i>Canis latrans</i>
Gray Wolf	<i>Canis lupus</i> (locally extirpated)
RedFox	<i>Vulpes vulva</i>

Kit Fox *Vulpes macrotis*

Family: Procyonidae (Racoons and Their Kin) Raccoon
Procyon
Iotor

Family: Mustelidae (Weasels and Their Kin)

Short-tailed Weasel *Mustela erminae*

Long-tailed Weasel *Mustela frenata*

Badger *Taxidea taxus*

Striped Skunk *Mephitis mephitis*

Spotted Skunk *Spilogale putorius*

Family: Felidae (Cats)

Mountain Lion *Felix concolor*

Bobcat *Lynx rufus*

Order: Artiodactyla (Hoofed Mammals)

Family: Cervidae (Deer)

Rocky Mountain Elk *Cervus canadensis*

Mule Deer *Odocoileus hemionus*

Family: Antilocapridae (Pronghorn)

Pronghorn *Antilocapra americana*

Reptiles

Order: Squamata (Lizards, Snakes)

Family: Iguanidae (Iguanas and Their Kin)

Long-nosed Leopard Lizard *Gambelia wislizenii*

Desert Spiny Lizard *Sceloporus magister*

Western Fence Lizard *Sceloporus occidentalis*

Sagebrush Lizard *Sceloporus graciosus*

Side-blotched Lizard *Uta stansburiana*

Desert Horned Lizard *Phrynosoma platyrhinos*

Family: Scincidae (Skinks)

Western Skink *Eumeces skiltonianus*

Family: Teiidae (Whiptails)

Western Whiptail *Cnemidophorus tigris*

Family: Colubridae (Colubrid Snakes)

Ringneck Snake *Diadophis punctatus*

Racer *Coluber constrictor*

Striped Whipsnake *Masticophis taeniatus*

Gopher Snake *Pituophis melanoleucus*

Long-nosed Snake *Rhinocheilus lecontei*

Western Terrestrial Garter *Thamnophis elegans*

Ground Snake *Sonora semiannulata*

Night Snake *Hypsiglena torquata*

Family: Viperidae (Vipers)

Great Basin Rattlesnake *Crotalus viridis lutosus*

Amphibians

Family: Pelobatidae (Spadefoots)

Great Basin Spadefoot Toad *Scaphiopus intermontanus*

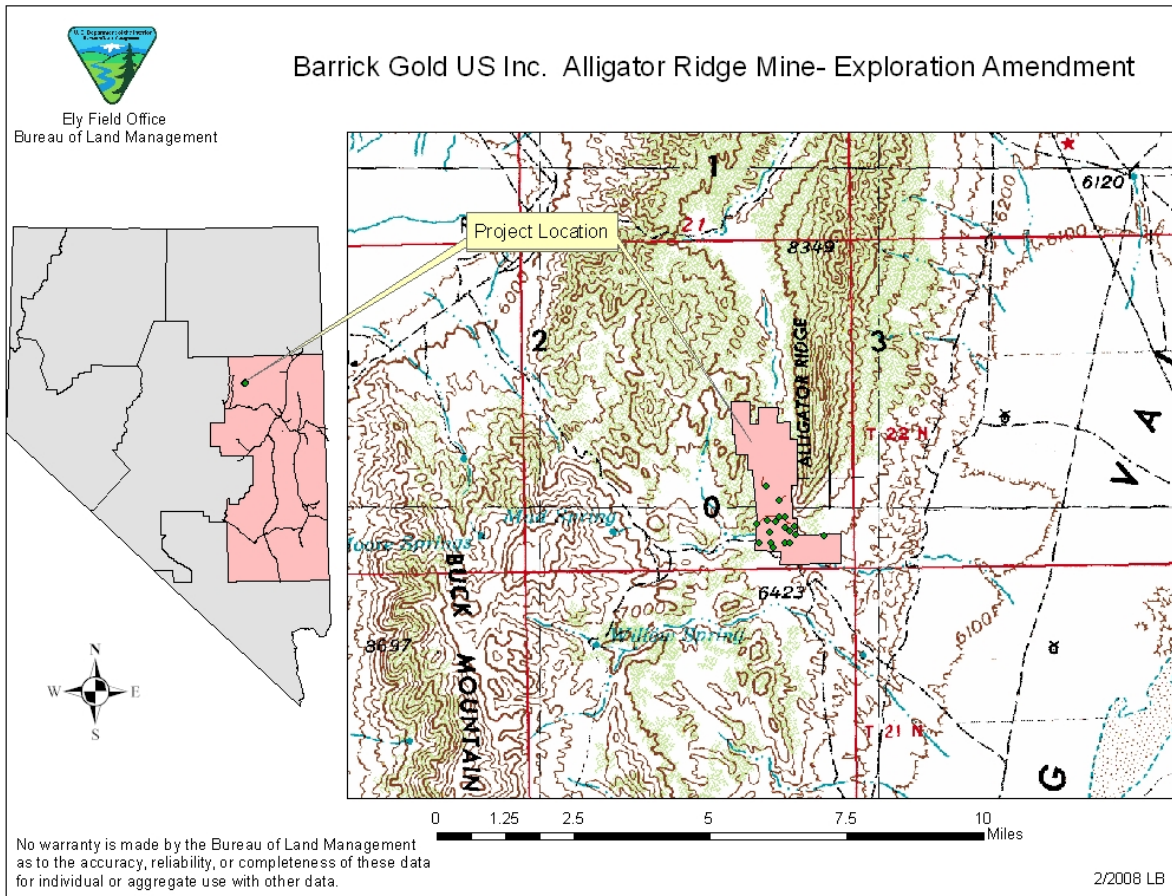
Updated: 1/2002 - Peter V. Bradley - Nevada Division of Wildlife
- Elko.

Family: Ranidae (True Frogs)

Spotted Frog *Rana pretiosa*

Bullfrog *Rana catesbeiana*

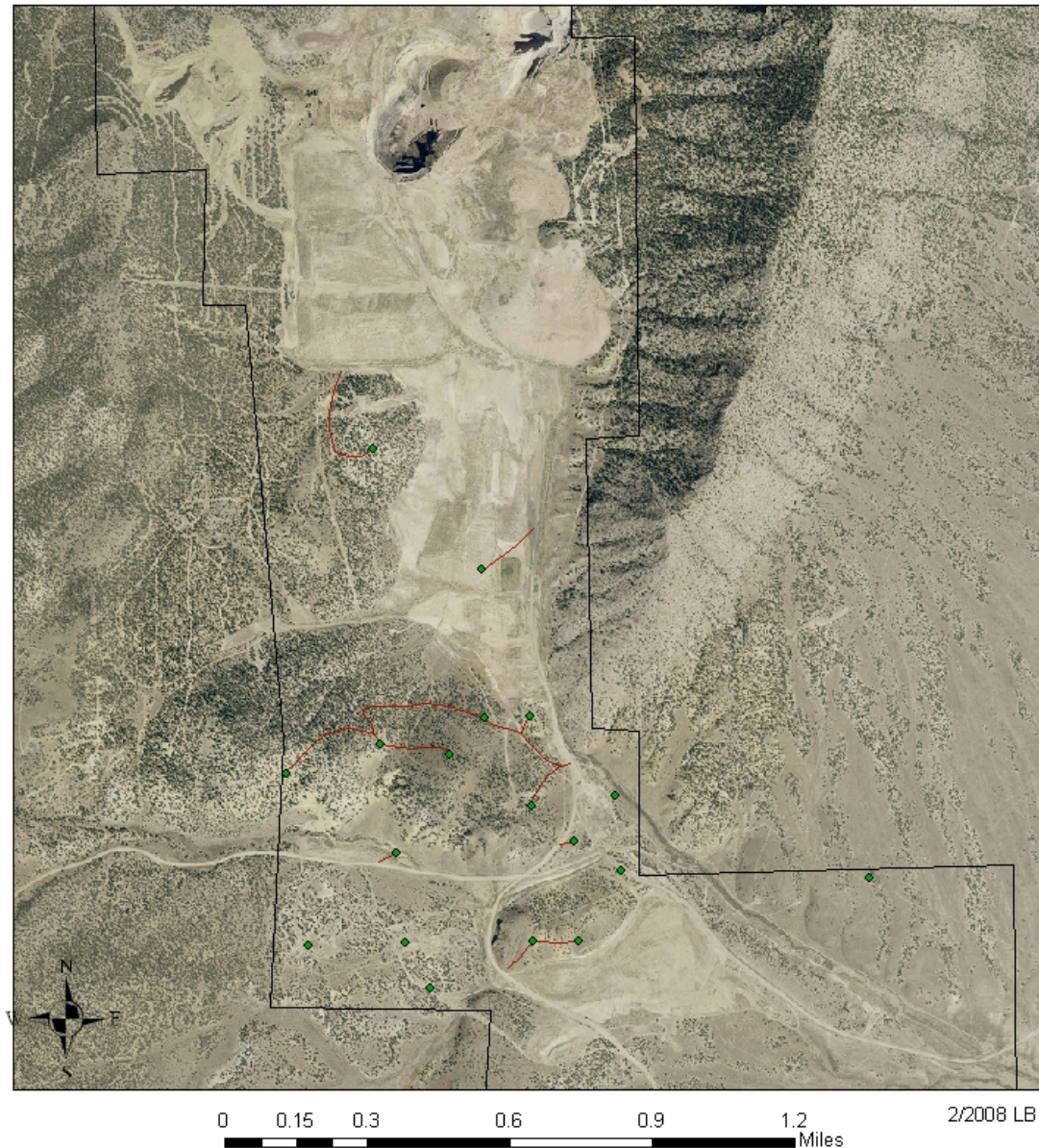
Note: This list is a combination of wildlife sight record data and our best effort to predict what wildlife would exist in this area in all seasons and in optimum habitat conditions.





Barrick Gold US Inc. Alligator Ridge Mine- Exploration Amendment

Ely Field Office
Bureau of Land Management



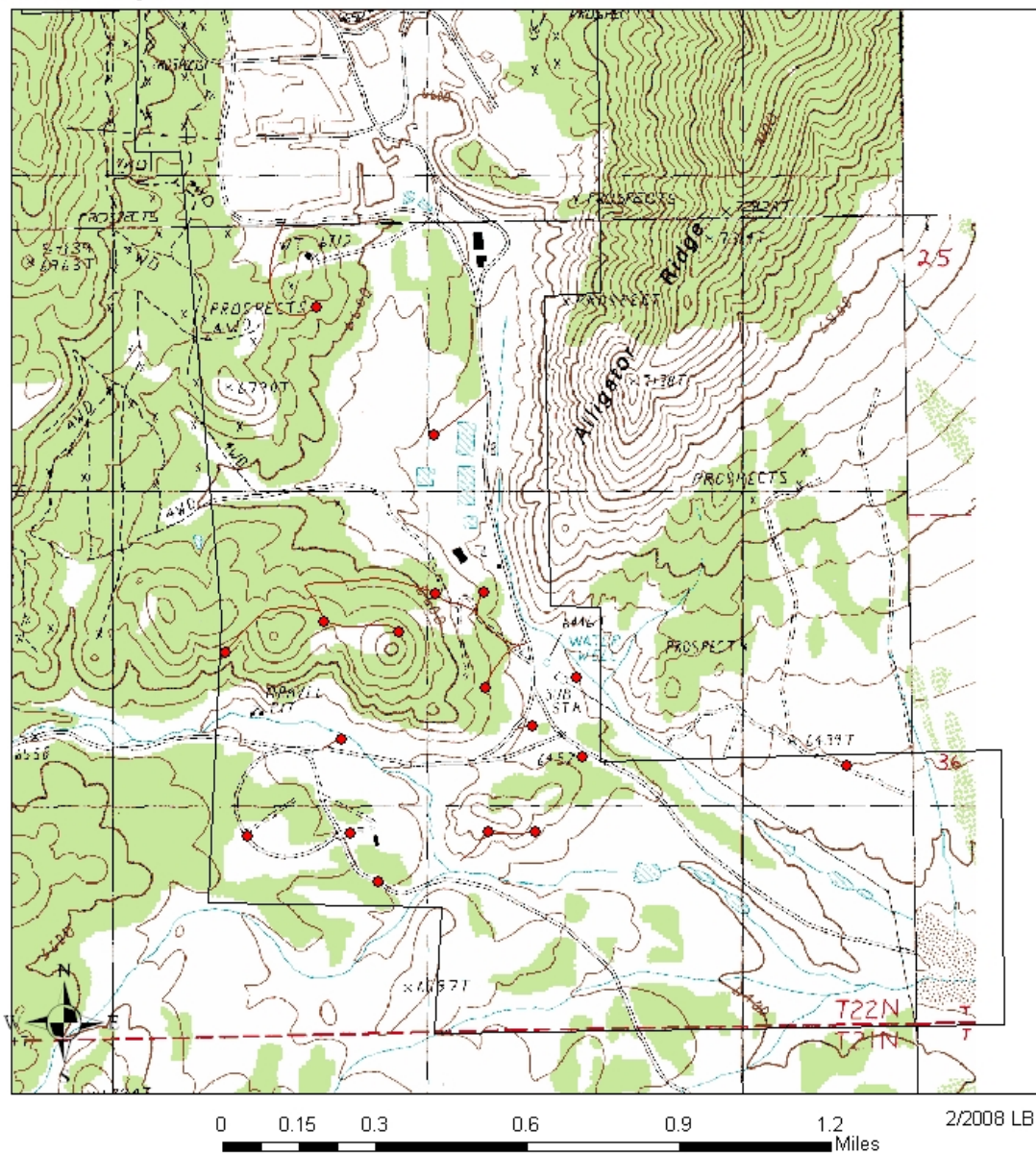
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Figure 2



Barrick Gold US Inc. Alligator Ridge Mine- Exploration Amendment

Ely Field Office
Bureau of Land Management



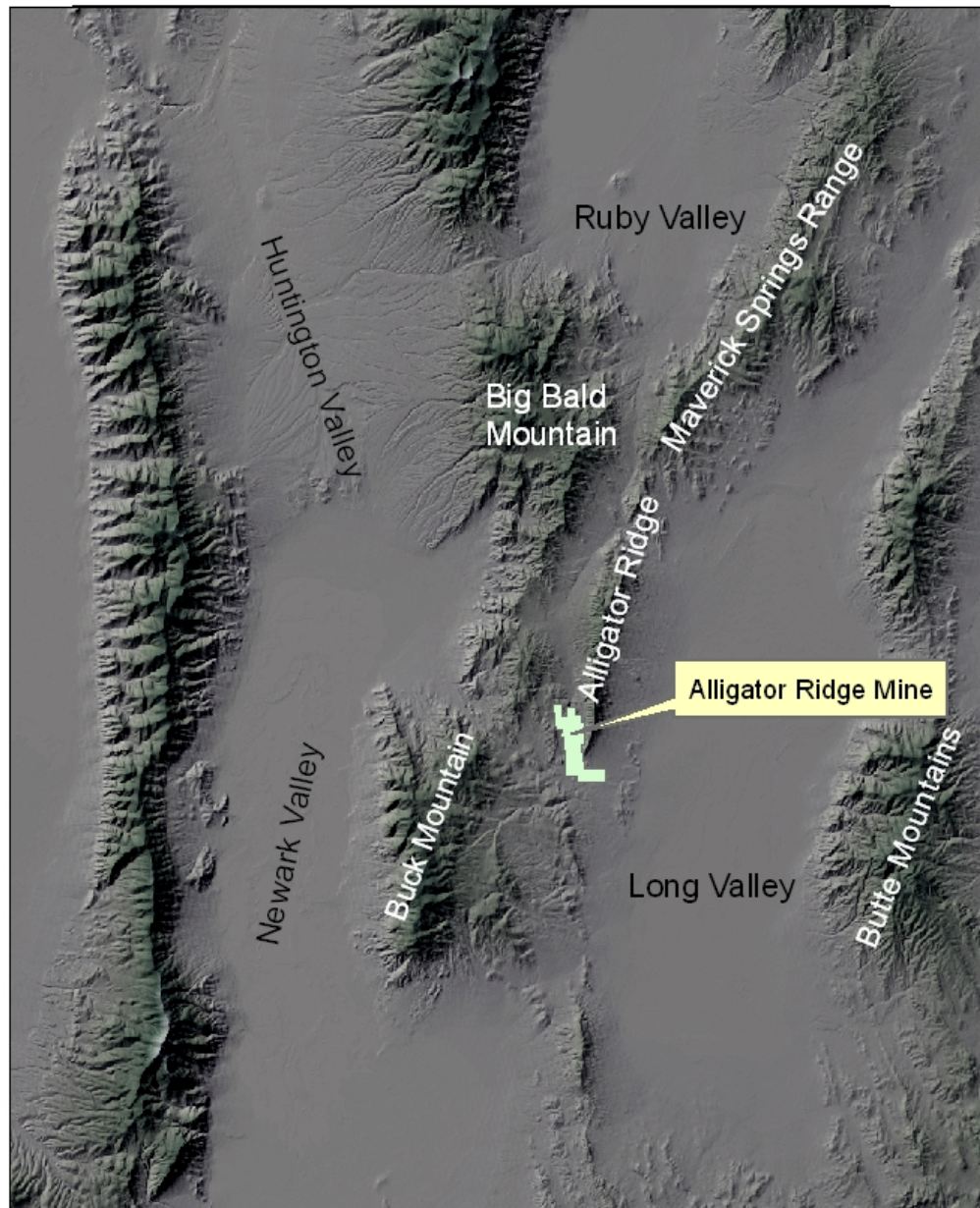
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for individual or aggregate use with other data.

Figure 3



Ely Field Office
Bureau of Land Management

Barrick Gold US - Vantage Drill Program - Spring 2008



0 1.25 2.5 5 7.5 10 Miles

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data.

Figure 4

LB 4/2008



Ely Field Office
Bureau of Land Management

Barrick Gold US - Vantage Drill Program - Spring 2008

